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# **Infantry Training**

**Volume I**

**INFANTRY PLATOON WEAPONS**  
**PAMPHLET No. 10**

## **SNIIPPING**

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**1951**

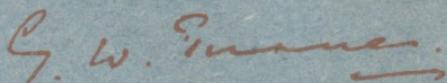
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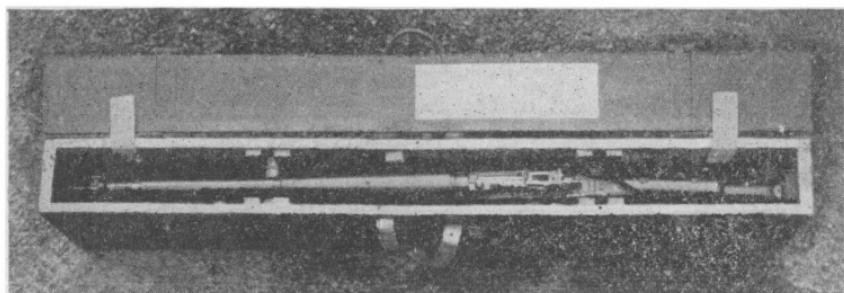
THE WAR OFFICE,  
21st November, 1951

## **AMENDMENTS**

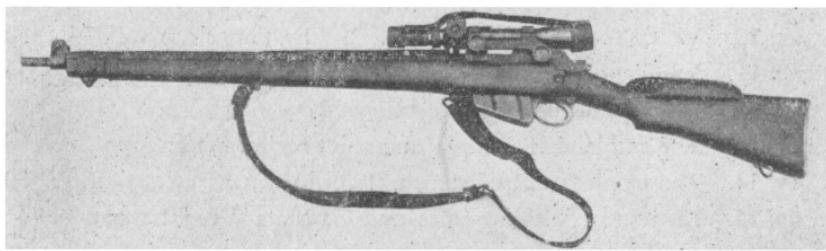
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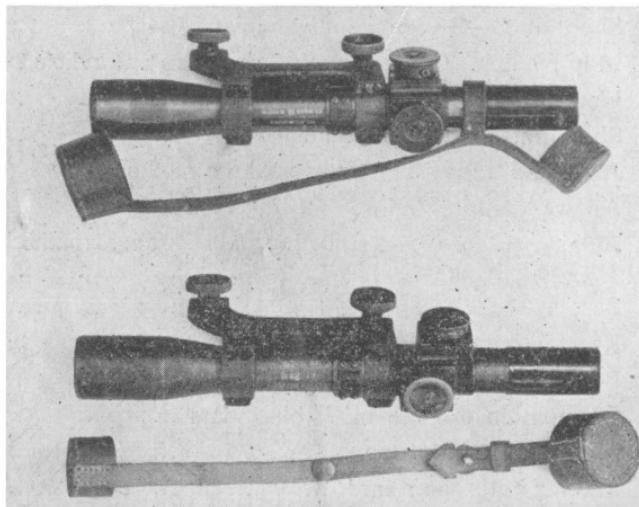
**FRONTISPICE**



A—The Rifle, No. 4, Mark 1 (T) in its chest.



B—The Rifle, No. 4, Mark 1 (T) with the sling fitted.



C—The No. 32 Telescopic sight (Mark 2 top, Mark 3 bottom).

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## FILMS, FILM STRIPS AND POSTERS

The following films, film strips and posters are recommended for use with the pamphlet.

### Films

Map reading:—		
Part I	C 944	The military map and conventional signs.
II	C 945	Contours—Hills and slopes.
III	C 946	Contours—Spurs, re-entrants and valleys.
IV	C 947	Visibility.
V	C 948	Map setting and position finding.
VI	C 949	Comparison of map and ground.
VII	C 950	Aids to direction.
VIII	C 951	Measurement of distance and choosing a route.
IX	C 952	Direction on the map.
X	C 953	Direction on the ground.

**FILMS, FILM STRIPS AND POSTERS—continued****Films****Air photo reading in the field:—**

Part I	C 878	The need for air photographs.
II	C 879	How to read air photographs.
III	C 933	How to use air photographs.

**Visual Training:—**

Part I	C 984	Why things are seen.
II	C 985	How to see.
III	C 986	How to observe.
IV	C 987	What does the enemy see (Ground view).
V	C 988	What does the enemy see (Air view).

**General Interest:—**

	C 915	I'm a Sniper.
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**Film Strips****Map Reading:—**

Part I	No. 801	The military map and conventional signs.
II	802	More conventional signs.
III	803	Hills and slopes. .
IV	804	Spurs, re-entrants and cols.
V	805	Rivers, streams and valleys.
VI	806	Visibility.
VII	807	Measurement of distance and choosing a route.
VIII	808	The grid system and map references.
IX	809	Direction on the map.
	827	Concealment for the sniper.
	849	Stalking (Obsolescent).

**Visual Training Posters**

WO Catalogue No. 7107 No. 2 Cut-out aids to visual training.

”	”	7108	3 Points of view (Ground)
”	”	7109	4 Methods of scanning.
”	”	7111	6 Points of view (Air).

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## INFANTRY TRAINING

### VOLUME 1—INFANTRY PLATOON WEAPONS

#### PAMPHLET No. 10

## SNIPING

### INTRODUCTION

#### General

1. Between the wars, sniping has in many cases been overlooked and by some has become almost a forgotten art. When hostilities begin there is a frantic rush to get snipers trained, and because of this, full value is not always obtained from them. These circumstances are sometimes occasioned by lack of knowledge of the subject; there is, however, no excuse for allowing sniper training to lapse.

2. A good sniper section is an asset to any field unit. Their training incorporates a wide variety of subjects which are almost as important as their skill with the rifle itself; for this reason it has been found that the value of these specialists extends in many directions beyond their primary task of shooting.

3. Sniping is the basic task of the infantry soldier developed to such a degree that it has become a specialist one; there is therefore a certain amount of overlap between this and other infantry training pamphlets. There are, moreover, certain subjects in which the sniper must be trained that are so fully dealt with elsewhere that no more than a mention of where they should be taught is given in this pamphlet.

#### Training

4. The training of a sniper should be one continuous process from beginning to end and no other form of training should be allowed to intervene.

#### The type of man required

5. The man selected for sniper training should be of above average intelligence, be strong and tireless, have the makings of a very good shot, have a liking for being alone and should, for preference, be a countryman.

#### Time required

6. The length of time required to train a sniper will depend very largely on the thoroughness of his previous training; some of the lessons in this

pamphlet can be curtailed or even omitted altogether if it is known that the man has had a really thorough grounding in all his preliminary work. It will be unusual to get a whole squad of men who are at an exactly similar state of training; it will do no harm to some of them if they have to do a certain number of the basic lessons again to allow the remainder to come up to their standard.

#### **The form of the pamphlet**

7. The pamphlet is laid out in lesson form and it will be found, in addition, to be a useful syllabus; the actual programming will depend on the training facilities available, local conditions dictating what adjustments are necessary.

8. The pamphlet is based on exactly similar lines to instruction given at the Small Arms Wing to all those on sniper courses there.

9. The Appendix lays down the conditions for the test for the sniper badge.

10. Immediately before the first field firing exercise will be found some general instructions on running them; these instructions have been given a lesson number though there will only be few occasions, such as when training sniping instructors, on which they will be taught.

#### **Size of squads**

11. Men undergoing sniper training require much more individual attention than is normally given in other small arms training. The ideal is that there should be four men only in a squad under one instructor.

### **LESSON 1.—QUALITIES AND SELECTION OF SNIPERS AND THE “MASTER EYE”**

#### **A INSTRUCTOR'S NOTES**

1. These notes serve the double purpose of giving information which may help in the selection of snipers and of giving their characteristics. They should prove useful for compiling a lecture in the early stages of a man's sniper training and no harm can be done in telling them the points on which they have been selected for this kind of work: this should serve to whet their appetite and instil keenness in them still further to develop the virtues required in the trained sniper.

2. The Master Eye test can be carried out at the end of the lecture or at some other time.

## B CONDUCT OF THE LESSON

### General

3. A fully trained sniper can be defined as a soldier, who is trained to locate an enemy, however well hidden, who can stalk or lie in wait for him unseen and who is, at the same time, an expert shot with the rifle. His object is to kill with one round.

4. He is the big game hunter of the battlefield and must combine the art of the hunter with the wiles of the poacher, the skill of a Bisley shot with the grim determination to seek out his enemy.

5. The sniper must be trained not only in rifle marksmanship but also to a very high degree in observation and in fieldcraft. Without great skill as an observer he will seldom be able to find suitable targets and without a comprehensive knowledge of fieldcraft he will rarely get to a fire position within shot of his quarry. This observation and fieldcraft must be thoroughly mastered by the sniper.

6. In addition, there is a large number of subjects which will be of great value towards making him a reliable and self reliant hunter: most of these are covered in the pamphlet. Others such as RT procedure, minor tactics, rock climbing, etc, can, if necessary, be incorporated.

7. There can be no real finality to a sniper's training in the hands of a competent and imaginative instructor. This partly accounts for snipers being centralized in battalion headquarters where their specialist training can be continuous.

### The sniper's task

8. The sniper's task is to kill individual enemy with single shots very quickly aimed if necessary; he will never fire a rapid succession of shots except in self defence. As a guide, the standard of shooting to be demanded of a sniper is that he should hit a man's head regularly at 200 yards and a man's trunk up to 400 yards range: this standard may well be improved on. Extreme accuracy can be obtained in target shooting at 1000 yards with the sniper rifle but shooting at anything approaching this range should be discouraged in the field unless there is some very special reason for so doing.

9. Where there is a choice of targets, the sniper should be trained carefully to pick out the most important ones such as an officer, a NCO, or other leader who can often be recognized by their actions and sometimes too by their badges; observers, snipers, signallers, men with wireless sets, runners, machine gun and mortar men, or any obviously engaged on some special task are fair game to the sniper and targets to be specially looked for.

10. There may be occasions when it is possible with an armour piercing bullet to put some enemy weapon or vehicle out of action by a well-aimed shot at its mechanism; this action might well be more effective in the long run than dealing with each member of the crew man by man.

## The selection of snipers

11. In order to get good results from sniping special care is necessary in selecting men for the task. Experience has shown that the primary consideration is a self-reliant personality with real determination and a natural liking for this kind of work. However brilliant a shot a man may be he will never make a good sniper unless his heart and soul are in the job. Furthermore, he can never become of real value to the other snipers in the unit and may even be a hindrance to them.

Some of the points which will help in selecting a sniper are:—

- (a) Eyesight, night vision and hearing must be of the highest standard.
- (b) There must be natural aptitude for fieldcraft; this and good eyesight will often be found more readily in the countryman and specially in keepers, stalkers, shepherds and poachers.
- (c) Intelligence and initiative must be of a high standard since snipers work independently to a large extent, and have to be trained in a wide variety of subjects.
- (d) Promise of being a good shot is essential, since, unless the sniper produces a high degree of skill with the rifle the rest of his training will be purposeless. Provided that a man has normal physical and mental attributes and can group to within 6 inches at 100 yards with iron sights, careful coaching will generally bring him up to the required standard; in this connection it must be remembered that the telescopic sight will never make a poor shot into a good one.

## The master eye

12. Many good rifle shots shoot from their left shoulder; this is not always due to the fact that they are left handed. More often than not it is a question of eyesight; most people have one eye stronger than the other. It is important that the sniper knows and uses his master eye for shooting if he can.

*The methods of discovering the master eye are:—*

- (a) With both eyes open, one finger is pointed at the right eye of another man, focusing the vision on his eye and "looking through" the finger held up. The other man should be able to see which eye of the man carrying out the test is in line with finger and his own right eye. Whichever eye this is, is the *master eye* and the one with which the man is automatically aiming.
- (b) A finger is pointed at some object with both eyes open. One eye is then shut, opened again and the process repeated with the other eye. Whichever eye is open when the finger appears to blot out the object being looked at is the *master eye*. Whichever eye is open when the finger appears either to the right or left of the object being looked at, is the *weaker eye* of the two.

## LESSON 2.—DEMONSTRATION OF CHARACTERISTICS OF SNIPER EQUIPMENT

### A INSTRUCTOR'S NOTES

1. It is advisable, when training snipers, that they should be told and shown at an early stage in their training, the characteristics and capabilities of the sniping equipment with which they will be issued.
2. The best way of doing this is by arranging a demonstration of the advantages of the equipment in the hands of a trained pair of snipers.

### B CONDUCT OF THE LESSON

3. There should be demonstration shoots as follows at 200 yards over cover:—

- (a) 5 rounds grouping at a range target.
- (b) 5 rounds snapshooting at a small figure target appearing over the bank at different places; the pair working together.
- (c) Picking out the key man of a section by means of the telescope.
- (d) A shoot at 5 plates on the stop butt with the No. 2 observing and giving corrections.

4. A useful demonstration can easily be arranged using one of those under instruction with an ordinary No. 4 rifle and one of the demonstrators with a sniper rifle. This demonstration can be repeated during Lesson 21.

Eight plates for each firer at 300 yards are placed on the stop butts and each firer is given ten rounds. On the command, the two open fire when the man armed with the sniper rifle should get his plates down with his ten shots or less and the other man is unlikely to be able to do so.

5. Finally a few rounds should be fired from each of the following positions—Hawkins, kneeling, sitting, standing and back.

6. At the end of the lesson there should be a brief summary.

## LESSON 3.—THE ESSENTIALS OF GOOD SHOOTING

To ensure that the snipers being trained fully understand the basic principles for good shooting, they should be revised or taught again the following lessons from Pamphlet No. 3—Rifle and Bayonet.

Lesson 7 The lying position and hold.

9 Aiming I.

11 Trigger control.

13 Firing a shot.

## LESSON 4.—CARE AND CLEANING OF THE SNIPER RIFLE AND TELESCOPIC SIGHT

### A INSTRUCTOR'S NOTES

#### Aim

1. To teach the care and cleaning of the No. 4 (T) rifle and the No. 32 telescopic sight.

#### Stores

2. A No. 4 (T) rifle and chest to each man (Chest SA No. 15), a telescopic sight in case to each man, a scout regiment telescope, in case, cleaning rods as available, phosphor bronze brushes, jags, oil, flannelette, pullthroughs and cleaning rag.

#### Instructional knowledge

3. The advantage of using a cleaning rod in preference to a pullthrough is that a rod is more searching, cleaning as it does, in both directions; thus the barrel is more quickly and thoroughly cleaned. Cleaning rods can be purchased locally and will soon pay for themselves by their efficiency and in time and trouble saved.

### B CONDUCT OF LESSON

#### Preliminaries

4. Normal safety precautions; issue cleaning materials to each man (at least six inches of flannelette to each man is required).

#### The Chest SA No. 15

5. Explain that the chest contains the No. 4 (T) rifle, sling and the telescopic sight in its case and may contain the scout regiment telescope. The muzzle of the rifle faces to the left and must always be replaced in this way. With the squad imitating, show how the rifle is removed by taking out the securing chocks and by swivelling the vertical block to one side; the sight case is also removed. The armourer will alter any chest that does not permit the scout regiment telescope to be packed in the chest correctly.

#### Approach

6. Explain that, while the general principles of cleaning and looking after the sniper rifle are similar to those for the normal service rifle, it must be appreciated that to maintain the exceedingly accurate qualities of the weapon and telescopic sight even greater care in its everyday handling in billets, etc, is necessary.

### The 32 Telescopic Sight

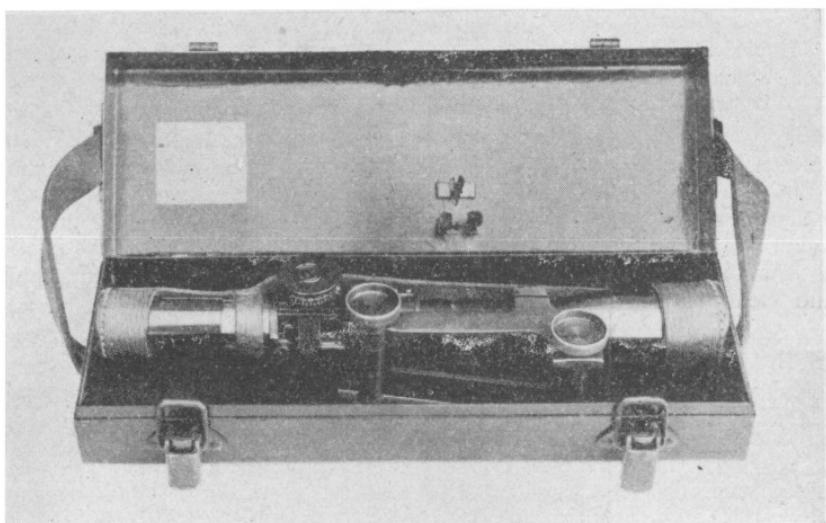


Fig 1.—The telescopic sight in its case.

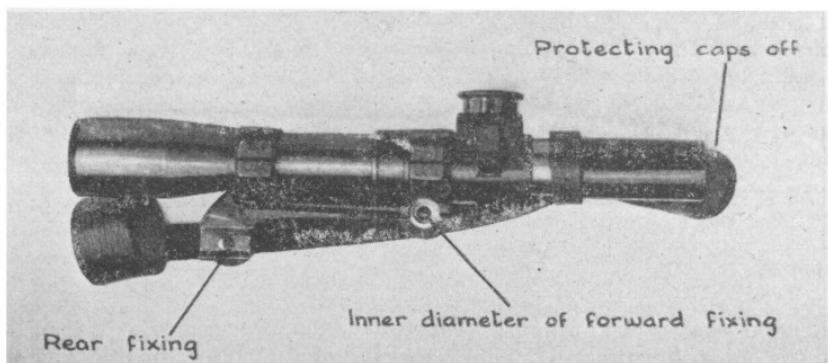


Fig 2.—The telescopic sight showing the fixings.

7. *Removal from its case.*—Explain and demonstrate with the squad imitating that after opening the lid of the case the right-hand milled screw is undone from the bracket of the sight case (*see Fig 5*); the left-hand screw is already free. The telescopic sight can now be removed. The protecting caps will normally be in position unless the sight is in use for aiming. Mention that the milled screws of the sight bracket or holder will never be unscrewed through the bracket or they and the spring washers may become lost. Mention that a new type of sight case made of metal covered with waterproofed fabric is being issued; special care must be taken with this type of case that it does not at any time become crushed or great difficulty will be experienced in removing or replacing the sight; this new sight case is known as the No. 8, Mark 2.

8. The rear protecting cap is most easily removed first, care being taken, when removing either, not to touch the lenses with the fingers. Show the squad the object and eye lenses and the portion of the bracket or holder which is attached to the rifle (*see Fig 6*).

9. Explain that, in order to avoid damage, the sight will always be kept in its case, unless it is in use on the rifle.

10. *Numbering.*—Emphasize that the rifle and the telescopic sight are issued as a *unit* and that sights are *not* interchangeable; if damage to either the rifle or sight occurs, they must be sent for repair together.

11. The registered number of the telescopic sight is stamped on the sight and also on the small of the butt of the rifle to which it belongs, immediately behind the cocking piece. In addition, in some cases, the rifle number will be found stamped on the bracket of the telescopic sight; as a further precaution against errors the number of the telescopic sight and rifle to which it belongs will be found inside the lid of the sight case or on the outside of the latest pattern case, the No. 8.

12. Question the squad.

#### **Cleaning the telescopic sight (General)**

13. Explain that there are three marks of this sight and all are cleaned in the same way. The lenses of the sight are of very soft glass and easily become scratched; scratches on the lenses make them unserviceable and the sight has to go away from the unit for repairs. Very careful cleaning will ensure long wear of the lenses.

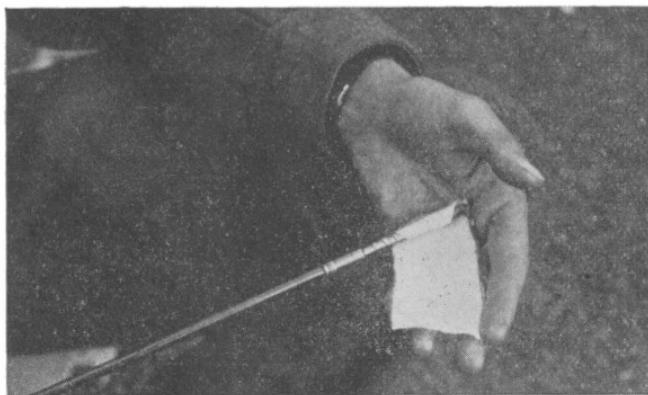
14. *The bracket.*—Explain and demonstrate with the squad imitating, that the brackets of the sight must be scrupulously clean, particular attention being paid to the inner diameter (*see Fig 6*) of the forward fixing; any dirt on any of these surfaces will prevent flush fitting on the pads and cause inaccurate shooting.

15. *The lenses.*—Explain and demonstrate, with the squad imitating where applicable, that the sight case, when issued, contains a small square of linen to be used only for cleaning the lenses of the telescopic sight. It must

be kept absolutely clean by frequent washing; particles of dust may best be removed from the lenses by breathing slightly on them and then carefully polishing. Spots and stains, which resist normal methods, will have to be removed by the application of a drop of methylated spirit on a separate piece of flannelette. Under no circumstances will the lenses be subjected to violent rubbing as they will very quickly become unserviceable. A piece of flannelette carefully washed out, makes a reasonable substitute for the linen square should it become lost.

**16. Question the squad.**

**17. *The rest of the sight.***—Show the cleaning of the rest of the sight with a small piece of very lightly oiled rag; great care must be taken that none of the rag comes in to contact with the lenses. The protecting caps may now be put on again and the sight returned to its case.



**Fig 3.—First stage of wrapping flannelette round the jag.**

**Daily cleaning**

**18. *Use of the cleaning rod.***—Explain and demonstrate with the squad imitating that the jag is fitted by screwing it clockwise on to the rod and a piece of flannelette size four inches by two is carefully wrapped tightly round the jag starting from the top (*see Figs 3 and 4*). Care must be taken that all of the jag is covered with flannelette. The rifle should be rested horizontally (*see Fig 5*) on a table to avoid damage to the barrel and the rod inserted from the breech end. To clean the barrel the rod is moved up and down through the full length of the bore, taking care not to let the jag come out of the muzzle; the flannelette should be changed frequently and the process continued till it comes out clean. The barrel should next be carefully inspected. If rod and jag are not available the rifle is cleaned with the pullthrough in the ordinary way.

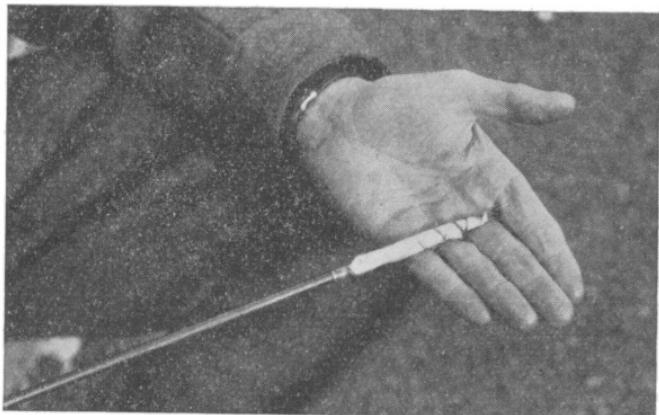


Fig 4.—Flannelette wrapped round the jag.

19. *Oiling*.—Explain that a slightly smaller piece of oily flannelette is used with the jag for oiling the barrel.

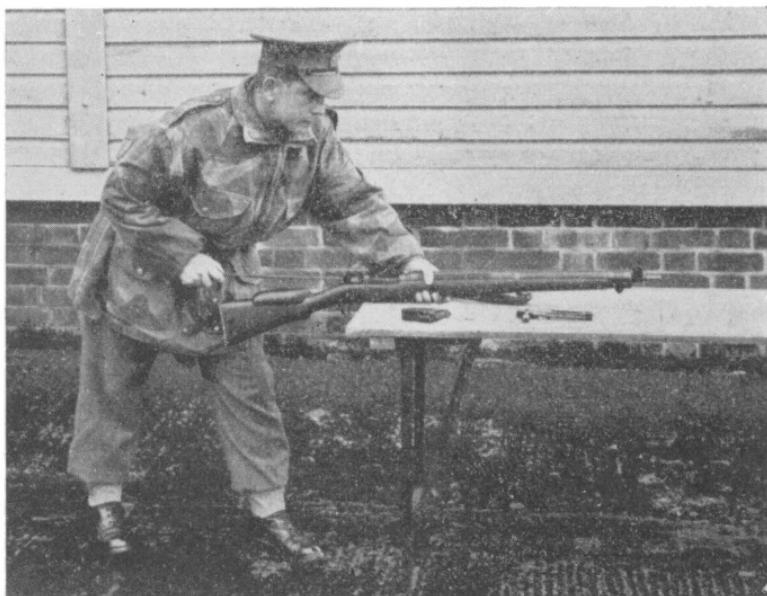


Fig 5.—Resting the rifle horizontally when using the cleaning rod.

20. *The chamber.*—Explain that a really clean chamber is essential if accurate shooting is to result; if a chamber cleaning stick is not available, one must be made. With the squad imitating, demonstrate the use of the cleaning stick. Emphasize that to inspect the chamber it must be looked into as much from a side as possible.

21. Practise the squad in cleaning, inspecting and oiling the barrel and chamber using the rod and chamber cleaning stick.

22. *The pads.*—Explain that the pads (*see Fig 6*) are those portions on the left side of the rifle to which the telescopic sight is clamped; they

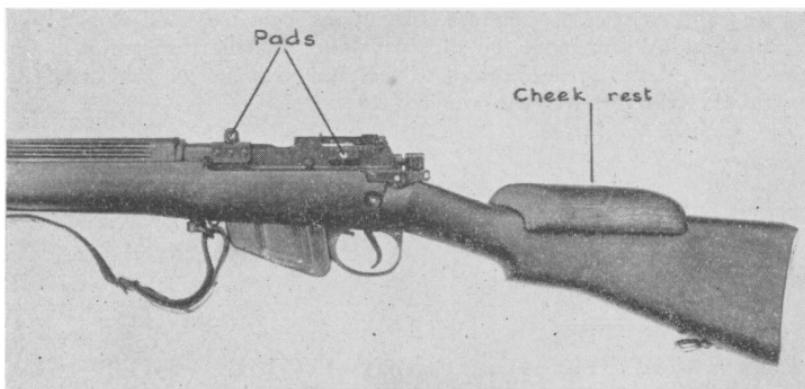


Fig 6.—The pads and cheek rest.

must be scrupulously clean and free from grit and oil since the presence of either would prevent the proper flush fitting of the telescopic sight and cause inaccurate shooting. They should be carefully wiped with a piece of rag. Make the squad clean the pads. The remainder of the rifle is cleaned in the normal way; mention the absence of a battle sight which would impede the fitting of the telescopic sight. The men may now replace their bolts and magazines.

#### Cleaning after firing

23. Explain that the use of water to remove fouling in the barrel is imperative since certain parts of the fouling formed by firing are insoluble in oil. The cap of a .303-inch round contains potassium chlorate which, when fired, becomes potassium chloride and it is this part of the fouling which causes rust to form so quickly if the rifle is not cleaned with water immediately after firing. Boiling water is best but water at any temperature and even saliva will dissolve the potassium chloride; water or saliva must therefore be used. After this treatment the bore is cleaned as for daily cleaning.

24. *Gauze*.—The gauze should never be used, except when necessary through unavoidable neglect on active service.

25. *Bronze brushes*.—A phosphor bronze brush, well-oiled and fitted to the cleaning rod may be used if at any time a barrel, through neglect, does not respond to normal cleaning. The barrel is then cleaned in the ordinary way.

26. Question the squad.

#### **Replacing the equipment in the chest**

27. Demonstrate and explain, with the men imitating, the replacement of the rifle and sight case. The cased scout regiment telescope will also go in the chest by lifting out the sliding wooden partition on the left; the telescope is placed in the bottom of the chest and the partition replaced so that the felted portion fits over the telescope.

28. Practise the squad.

#### **Conclusion**

29. Questions to and from the squad.

30. Further practice of weak points.

31. Sum up.

### **LESSON 5.—THE TELESCOPIC SIGHT—FITTING, SIGHT SETTING AND AIMING**

#### **A INSTRUCTOR'S NOTES**

##### **Aim**

1. To teach the fitting of the telescopic sight to the rifle and the method of loading when the sight is fitted.

2. To teach the setting of the range and deflection drums.

3. To teach aiming with the telescopic sight.

##### **Stores**

4. Sniper rifles, telescopic sights in cases, an aiming rest per man and 200/25 representative targets, drill cartridges.

##### **Instructional knowledge**

5. The representative target is placed at 75 yards as the telescopic sight magnification is three times. A smaller target is required if working indoors.

6. For paragraphs 12 to 23 the squad should be seated round a table.

7. From paragraph 24 onwards the rifles should be in the aiming rests.

8. No attempt must be made in this lesson to teach any of the minute of angle table.

## B CONDUCT OF THE LESSON

### Preliminaries

9. Normal safety precautions.
10. Set out the representative targets at 75 yards.

### Revision

11. Remove the telescopic sights from their cases; question and practice the squad on cleaning the sights and the pads on the rifle.

### Approach

12. Care in fitting the telescopic sight to the rifle is most important if really good shooting results are to be obtained. The presence of dirt between any parts of the sight and rifle when the former is fitted will cause errors giving great trouble in maintaining zero.

### Fitting the telescopic sight

13. Explain that the front pad of the rifle is liable to become loose if knocked and this must be examined for tightness before any attempt is made to fit the sight to the rifle.

14. With the squad imitating, explain and demonstrate the fitting of the telescopic sight. The rifle is laid across the knees with the muzzle to the left and the bolt downwards; the telescopic sight is held with the bracket or holder towards the rifle and the object lens towards the muzzle. (*See Fig 7*).

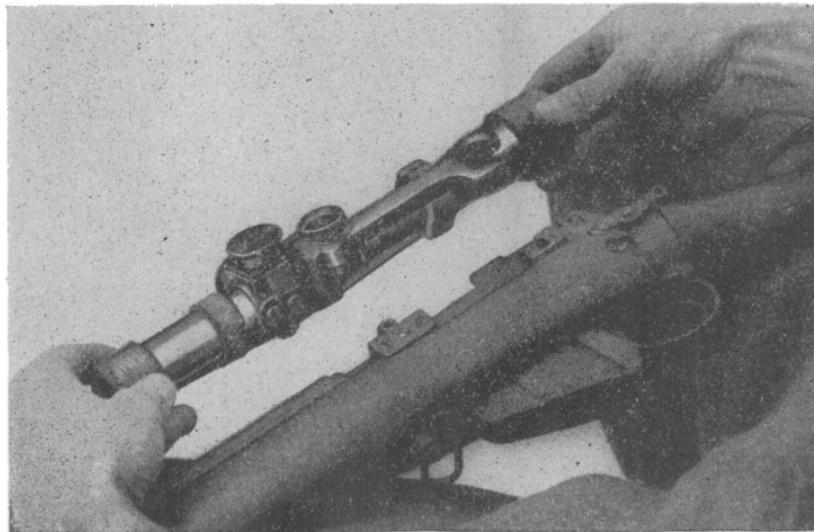


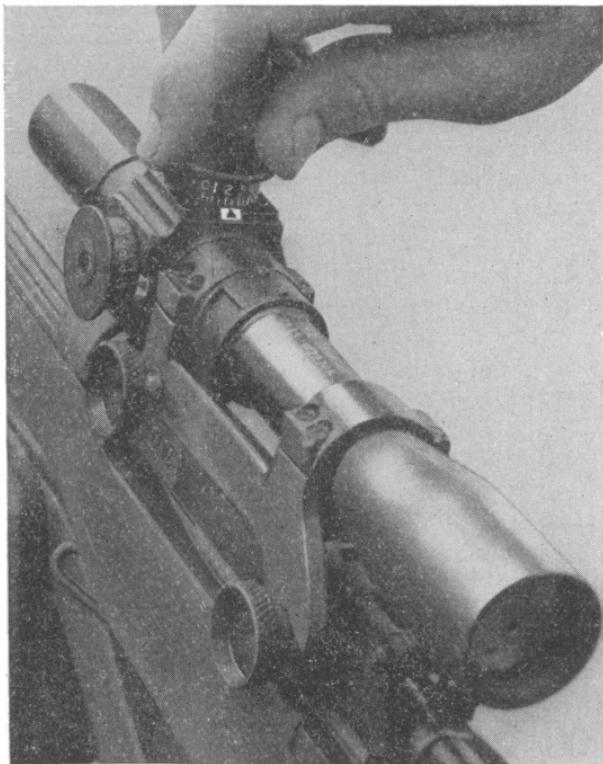
Fig 7.—Fitting the telescopic sight to the rifle.

*simultaneously* till hand tight; it is important to do it like this to avoid strain on the screws and bracket and also to ensure that the sight is put on in the same alignment each time. A final tightening to the maximum amount possible is now given, always finishing with the *rear screw*.

15. Removal is done by unscrewing the fixing screws simultaneously.
16. Practise the squad in fitting and removing the sights, finally leaving them fitted for the next part of the lesson.

#### **Loading and unloading with the sight on the rifle**

17. Explain and demonstrate with the squad imitating that loading must be done with each round singly or by removing the magazine and filling it.
18. *Unloading* is done in the usual way at this stage, but mention may be made of slight differences to be taught later.
19. Practise the squad in loading the rifle using both methods.



**Fig 8.—Adjusting the elevation drum.**

### Setting of the sight

20. *Elevation.*—Explain that sightsetting is done by rotating the milled part of the range drum till the required figure on the drum coincides with the top of the black triangle on the block of the sight. (See Fig 8).

21. With the squad imitating show that an adjustment from 0 to 1,000 is possible. Explain that by moving the drum a click at a time a much finer adjustment is possible which will be dealt with later on.

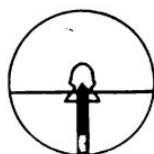
22. Practise the squad in setting the range drum to various distances.

23. *Deflection.*—Explain that a deflection drum has been provided on the telescopic sight to prevent the necessity of having to aim off except on very rare occasions. The method of using the deflection drum will be taught later and at this stage the men should set the drum at 0; the method of reading this drum is the same as that for the elevation drum.

### Aiming

24. *Positioning the head.*—Explain that before any aiming can be done it is necessary to position the head correctly so that a full field of view is obtained. Mention that the cheek rest is to give comfort when aiming. Explain, with the squad trying it themselves, that if the eye is held very close to the sight only a small field of view is obtainable. If the head is moved further back the field of view will rapidly expand to the maximum extent. If the head is drawn back beyond this point the field of view will again decrease. The correct position for the head, therefore, is that which gives the fullest field of view. Tell the squad that the magnification is three and that there is no means of adjusting the focus; cases of difficulty with the focus are very rare.

25. Practise the squad in obtaining the correct head position quickly.



Correct Aim



Floating Aperture

Fig 9.—Correct and incorrect aims with the telescopic sight.

26. *The aiming method.*—Explain with the aid of a diagram (see Fig 9). the method of aiming; the disengaged eye should be closed:—

- (a) The head must be correctly positioned.
- (b) The point of aim must be selected.
- (c) The tip of the pointer must be kept upright while it is brought up to the point of aim.

Mention that the cross wire is merely an additional aid for those who find difficulty in keeping the pointer upright.

27. Show the squad a correct aim laid at a representative target placed out at 75 yards.
28. Practise the squad in laying aims.

### **Conclusion**

29. Questions from and to the squad.
30. Final practice of weak points.
31. Sum up.

## **LESSON 6.—ORGANIZATION OF THE SNIPER SECTION (LECTURE)**

### **A INSTRUCTOR'S NOTES**

1. A blackboard or special chart should be used to show the organization of the section and its equipment.
2. A complete set of kit is necessary and each item should be shown as it is dealt with.
3. At the end of the lecture, a pair of snipers, fully dressed and equipped for a sniping task, should be available for inspection.

### **B CONDUCT OF LESSON**

4. *The establishment* for a sniping section of an infantry battalion is as follows:—

- 1 Sergeant.
- 1 Corporal.
- 2 Lance Corporals.
- 4 Privates.

5. Although no specialist sniping officer exists on the battalion establishment, it is essential that some officer, having a thorough knowledge of the subject, should supervise the selection, training and handling in battle of the unit snipers. This work is usually entrusted to the battalion intelligence officer.

6. The measure of the success of the snipers will depend very largely on the enthusiasm of the officer chosen, on his judgment and skill in selecting his team, and on his energy in directing their training and operational tasks. Whatever their individual prowess, it will be found that this will be wasted unless there is such leadership and support.

7. As in the case of other specialists it is necessary to train 100 per cent reserves. In battle it may often be found necessary, in order to provide reliefs, to employ these reserves operationally in conjunction with the first team.

**The scale of equipment (See Fig 10)**

8. The authorized scale of specialist equipment for the snipers of an infantry battalion is:—

Rifles No. 4, Mark 1 (T), <i>ie</i> , fitted with a No. 32 Telescopic sight	...	...	...	...	...	...	...	8
Telescopes, scout regiment, Mark 2	...	...	...	...	...	...	...	8
Binoculars, prismatic, No. 2	...							8
Smocks, denison								8
Watches, GS	...	...	...	...	...	...	...	8
Compasses, prismatic, liquid, Mark 3	...	...	...	...	...	...	...	8

In addition one extra face veil is authorized for each sniper; this is expendable.

Snipers will normally operate in pairs, and this scale is sufficient to equip four pairs.

**Additional equipment**

9. When on operations each pair of snipers should have some additional articles of equipment and the following list shows what has been found practicable:—

Machine carbine (carried by the No. 2 on some occasions as an alternative to the sniper rifle)	...	...	...	1
Grenades No. 36M				2
Grenades No. 80				2
SAA, ball, rounds	...	...	...	50
Tracer rounds (can be used to indicate difficult targets to others)	...	...	...	5
Armour piercing rounds (for loopholes or weapons)				5
Water bottles	...	...		1
Emergency rations	...			2
Maps and air photographs	...	...	...	as required
Helmet nets. (This is the ideal form of head camouflage, provided it is well garnished)	...	...	...	2

10. This list is by no means exhaustive and will be subject to variation as conditions demand. However, the sniper must always travel as light as possible and to this end the denison smock with its ample pockets, is most useful as it eliminates the need for web equipment.

1. Case for telescope, sighting, No. 32
2. Case for telescope, scout regiment
3. Denison smock
4. Case for binoculars
5. Binoculars, prismatic
6. Face veils
7. Compass, liquid, prismatic
8. Telescope, scout regiment
9. Watch, G.S.
10. Rifle No. 4, Mark 1 (T) with telescope sighting No. 32
11. Tool adjusting No. 1, Mark 1
12. Tool adjusting No. 2, Mark 1

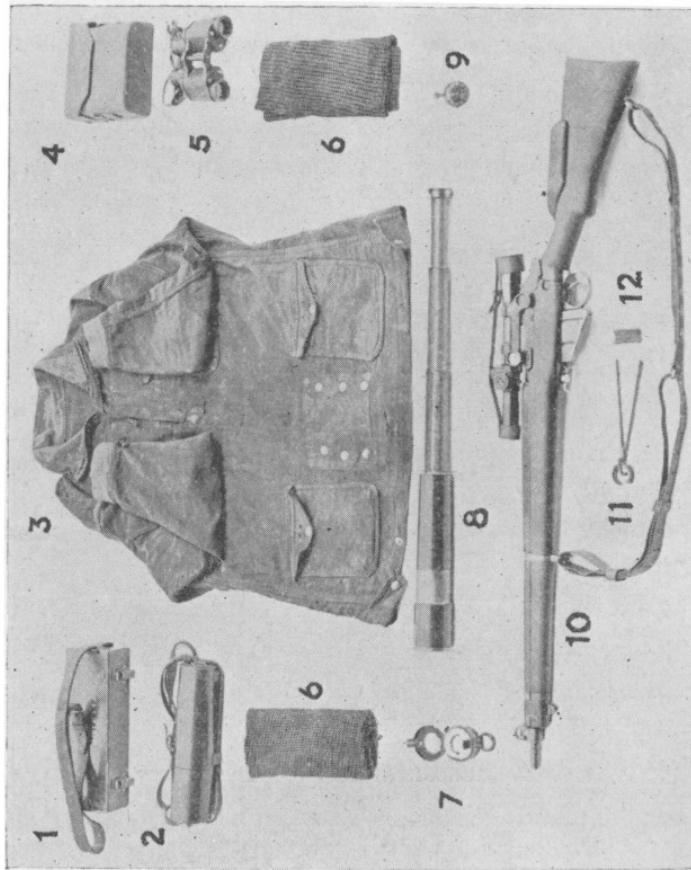


Fig 10.—The sniper's equipment.

## LESSON 7.—THE USE OF THE SLING

## A INSTRUCTOR'S NOTES

**Aim**

1. To teach the fitting of the sling to the rifle.
2. To teach the method of using the sling.

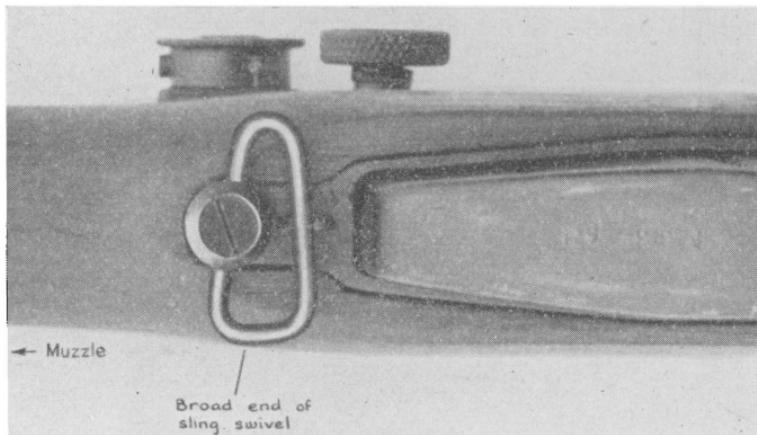
**Stores**

3. Sniper rifles, telescopic sights and 200/25 representative targets.

**Instructional knowledge**

4. The broad end of the magazine sling swivel should face to the right (on the same side of the rifle as the knob of the bolt) for a right handed firer and the other way round for a man firing from his left shoulder. If any of the swivels are found to be on the wrong way round, they must be altered by the armourer before this lesson is taught. (*See Fig 11*).

If as a result of the master eye test (*see Lesson 4, para 12*) the man's master eye is found to be the left one, and it is considered that he would shoot better from the left shoulder, then the magazine sling swivel should be altered.



**Fig 11.—The correct way round for the lower sling swivel. (Right handed firer).**

5. Some men find it difficult to accustom themselves to the use of the sling and at first may not notice any improvement in holding; practice will soon convince them; the instructor must insist on the men using the sling should any try to avoid it.

## B CONDUCT OF THE LESSON

### Preliminaries

6. Normal safety precautions.
7. Set out representative targets and remove web belts.
8. Remove and dismantle the slings if attached to the rifles.
9. Ensure that the magazine sling swivels are facing the right way.
10. Set the deflection drums at zero.

### Revision

11. Fitting of telescopic sights and setting ranges (Lesson 5).

### Approach

12. A special sling has been provided for the sniper rifle in order to produce maximum steadiness when it is not possible to rest the rifle or forearm; it may also often be possible to use cover and the sling in conjunction. Unless the length of the sling is correct and it is properly fitted to the firer, the desired steadiness will not be obtained. Each man must adjust the length of the sling to suit his own requirements.

### Assembling the sling on the rifle

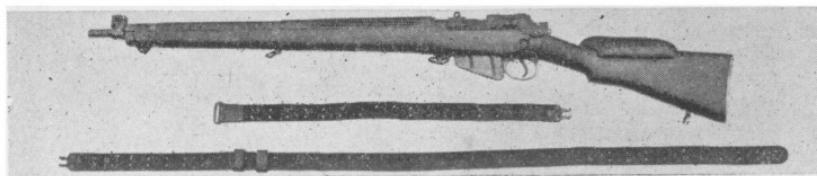


Fig 12.—Assembling the sling (1st stage).

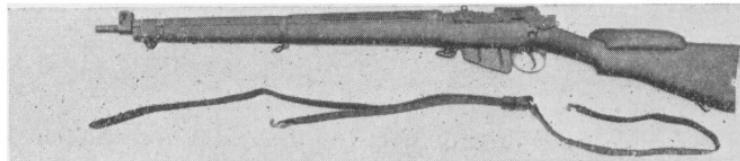


Fig 13.—Assembling the sling (2nd stage).

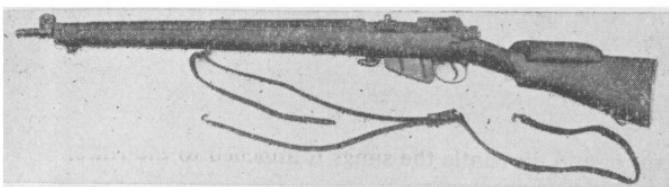


Fig 14.—Assembling the sling (3rd stage).

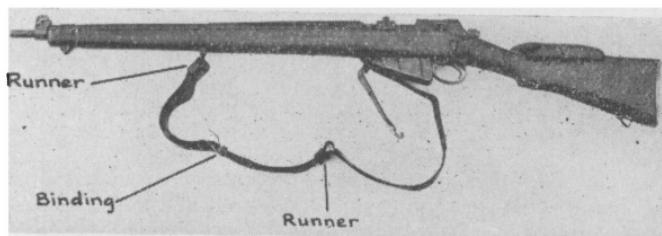


Fig 15.—Assembling the sling (4th stage).

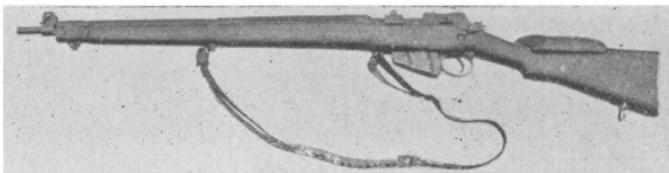


Fig 16.—Assembling the sling (5th stage).

13. With the squad imitating explain and show each stage. The rifle is laid on its right side (bolt downwards) and the pieces of the sling laid out (*see Fig 12*), the long portion with claws uppermost towards the muzzle of the rifle and the short piece with claws uppermost towards the butt. The two leather runners are placed on the plain end of the long portion and moved to a position about one foot from the claws; if one of the runners appears to be larger than the other, it should be nearest the claws. (*See Fig 12*).

The plain end of the long portion is now passed through the metal 'D' of the short portion and doubled back on itself, passed through both runners and pulled so far that the holes farthest from the plain end are just beyond the claws; the runners should now be moved as far as possible to the right. Next, the sling should be turned on its edge with the front claws towards the rifle and the plain end passed through the upper sling swivel in a forward direction; it is turned back and allowed to pass between the two lengths thus formed. (*See Figs 13 and 14*).

The claws are engaged in the pair of holes farthest from the plain end and positioned as close to the upper sling swivel as possible. The left hand runner is moved up so that it covers the rivets of the brass; difficulty may be experienced with the runners of a new sling and they may have to be stretched. The loose plain end should be bound to keep it in position. (*See Fig 15*).

The claws of the short portion are pushed forward through the magazine swivel (*see Figs 15 and 16*) and secured in about the seventh pair of holes from the claws. The length of the sling is adjusted by moving the claws on the short portion of the sling. Explain that the final length of sling required can be determined only in the lying position.

#### 14. Practise the squad.

#### **Positioning the sling on the firer's arm**

15. With the squad imitating show the way to position the sling on the arm; the men should be standing with their actions cocked and the rifle held almost perpendicularly, the butt resting against the right thigh. The left hand is passed under the rifle from the left and through the loop formed by the sling ensuring that it is pushed as far up the arm as possible (*see Fig 17*); the hand is brought under and then over the sling in a clockwise movement and the rifle grasped at about the point of balance (*see Fig 18*). If an aiming position is now adopted it should be found that the sling gives firm support without causing strain or restricting the circulation. If the fitting of the sling is now correct it should not require much alteration when any other position is used. Remind the squad that the actual alteration to the length of the sling must be made only by moving the claws on the shorter portion.

#### 16. Practise the squad.



**Fig 17.—Positioning the sling on the arm—standing (1st stage).**



**Fig 18.—Positioning the sling on the arm—standing (2nd stage).**

#### **Using the sling in the lying position**

17. Explain that the positioning of the sling in the lying position must be done with a minimum of movement, and with the squad following, show how this is accomplished. The rifle should be held by the right hand at the magazine and the muzzle kept just clear of the ground; the left hand is passed through the loop formed by the sling as was done standing. (*See Fig 19*). The rifle should next be drawn back slightly and canted to the right; working with the right hand under the body the sling is hitched up the left arm as far as possible. (*See Fig 20*). Point out here that little assistance

will be given by the sling if it is allowed to come near the elbow; any alteration to the length of the sling may now be made as already taught. Minor adjustment is made by moving the left hand *slightly* forwards or backwards; in the final position there should be a feeling of absolute security and firmness without any feeling of strain or discomfort.

A more oblique body position than normal is advocated and it will be found that in doing this the left hand comes rather farther forward than usual and the whole position becomes slightly lower. (See Fig 21).

18. Practise the squad.



Fig 19.—Positioning the sling on the arm—lying (1st stage).



Fig 20.—Positioning the sling on the arm—lying (2nd stage).



Fig 21.—The sling in use—lying.

### **Modifications to the hold when the sling is in use**

19. Explain that the sling by itself will not keep the rifle steady and there must be no tendency to loose holding with the right hand merely because assistance in the shape of a sling is being given. With the men lying down and their slings adjusted, explain that the right hand hold is normal, *i.e.*, tight and pulling back into the shoulder. Demonstrate and make the squad imitate the action of the left hand which should make no attempt to turn the rifle out of the shoulder, as has been previously taught, nor should it pull the rifle back into the shoulder; this hand should be used merely as a rest with the fingers applying a light gripping pressure to the wood work.

### **Testing the hold**

20. Let the man take aim with the sling in position and, breathing normally, notice the movement of the pointer; if this moves vertically up and down, the position is a good one and the sling correctly adjusted. If movements off the vertical path are seen, the position or the sling need alteration. Emphasize that before actual firing begins, automatic alignment and limber up are of even greater importance than usual.

21. *Overcoming slight movement.*—Explain that sometimes very small jerky movements of the pointer may be noticed; these are caused by pressure of the sling on the artery of the left arm. The remedy is to wear an extra garment such as a cardigan or place some kind of a pad between the sling and the arm; a spare face veil or a handkerchief will be found useful for this purpose. Only the very slightest movement should then be noticed.

22. Practise and question the squad on the modified hold, testing it and overcoming jerky movement. Opportunity should be given for a comparison of steadiness with and without the sling in use.

### **Use of sling for carriage**

23. Although the rifle can be carried slung when the sling is fitted for firing, it is much more convenient to have the short portion of the sling fitted to the butt swivel.

24. Explain and demonstrate with squad imitating. The claws of the short portions are unhooked. The short portion is then withdrawn from the magazine swivel and passed through the butt swivel, and rehooked. It is vital that the exact holes required when the sling is fitted for firing are noted, so that a quick change back can be made.

25. Practise the squad.

### **The cheek rest**

26. Explain that the purpose of the cheek rest is to provide comfort when aiming with the telescopic sight fitted; it must not interfere with the grip

of the right hand and it is permissible for the unit armourer to effect alterations to suit individuals. With the men in the aiming position, discuss with each in turn if their cheek rest is satisfactory and if not, arrange to have them modified.

### **Conclusion**

27. Questions from and to the squad.
28. Final practice of weak points.
29. Sum up.

## **LESSON 8.—FIRING USING THE SLING AND THE HAWKINS POSITION**

### **A INSTRUCTOR'S NOTES**

#### **Aim**

1. To teach firing when using the sling.
2. To teach firing when using the Hawkins position.

#### **Stores**

3. Rifles and telescopic sights, 200/25 representative targets, drill cartridges.

#### **Instructional knowledge**

4. The most suitable ground for this lesson is that which has small depressions which would not give adequate protection from view to a sniper firing in the ordinary way; such depressions do, in fact, give more protection from view when the Hawkins position is in use. When teaching the Hawkins position, the contrast in exposure between it and ordinary methods of holding should be shown, the squad viewing from about 100 yards in front. (*See Fig 25*). Two 40-minute periods will be required.

## **CONDUCT OF LESSON**

#### **Preliminaries**

5. Normal safety precautions.
6. Set out the targets, fit telescopic sights and remove web belts.

#### **Revision**

7. Revise the use of the sling and make sure that they are correctly adjusted; make the men carry out the test for correct adjustment and position.

### Firing using the sling

8. Explain and demonstrate that the principles of trigger operation and firing are the same when using the sling as without it, but there will be some loss of speed when working the bolt owing to the more oblique body position. Some men may find it difficult to reload keeping the butt in the shoulder but practice will, in most cases, overcome this. In the early stages and unless a second shot is necessary, men should lower the butt after each round and hitch the sling up the left arm by passing the right hand under the rifle, as it will almost certainly be found that the sling has slipped down the arm. Emphasize that the standard to be aimed at is a succession of quick shots without taking the butt from the shoulder.

### 9. Practise the squad.

### Precautions when re-loading

10. Explain that there will be occasions when quick reloading may give away the position, partly because of the movement of the arm but chiefly on account of the empty case flying some distance from the rifle. Demonstrate, using drill cartridges, that to overcome this, stealthy reloading is necessary and is done by drawing the bolt back very cautiously with the rifle tilted well over to the right so that the empty case falls to the ground beside the firer. It may even be necessary to reload with the butt out of the shoulder and with the breech a few inches from the ground. (*See Fig 22*). This action may take several seconds to complete.

The sniper must decide which method best suits conditions.



Fig 22.—Cautious re-loading.

### 11. Practise the squad.

**The Hawkins position (See Figs 23, 24 and 25).**



**Fig 23.—The Hawkins position (left view).**

12. Explain that when firing from a very low bank or a fold in the ground, great steadiness and excellent concealment may be obtained by using the Hawkins position, without making any use of the sling. Demonstrate and explain the position. The body is very much more to the left than usual. The left forearm rests on the ground for the greater part of its length and the left hand holds the rifle at about the outer band or, by clenching the fist, the sling swivel. (*See Figs 23, 24 and 25*).



**Fig 24.—The Hawkins position (right view).**



**Fig 25.—The Hawkins position shown from the front with a sniper using the sling in a normal manner.**

The toe of the butt should be on the ground under the firer's shoulder. To control recoil on firing the left hand must maintain a forward pressure; the butt must not be placed against anything solid or the weapon will be damaged.

### 13. Practise the squad.

#### **The modified Hawkins position**

14. Explain that when the ground is very soft or when using certain slopes it may not be possible to obtain sufficient depression of the muzzle to use the normal Hawkins position. Demonstrate that to overcome this difficulty the butt may be placed on the point of the shoulder or the upper arm.

### 15. Practise the squad in the modified Hawkins position.

16. Finally explain that when using the Hawkins or the modified position, less elevation will be required than when firing using the sling in the normal way, owing to the difference in the holding and the method of absorbing the recoil of the rifle. The required deduction can only be determined by firing.

#### **Conclusion**

### 17. Questions from and to the squad.

### 18. Final practice of weak points.

### 19. Sum up.

## **LESSON 9.—FILM “I'M A SNIPER”**

The difference between the film and present day teaching must be pointed out to the audience.

## LESSON 10.—VISUAL TRAINING INTRODUCTION. “WHY THINGS ARE SEEN” REVISION

This lesson is designed to impress on the soldier the importance of visual training and to teach him the principles he must master if he is to be capable of dealing with problems of observation and concealment.

He has now been given a sniper rifle but before he handles it practically and the equipment that goes with it, he must understand the conditions under which he will have to use it in war. Unless he can both observe the enemy and conceal himself successfully he can never be a good sniper.

The thoroughness of the man's early training will dictate whether this lesson will have to be taught or if it can be taken in the form of a revisionary period.

Details of the lesson will be found in Pamphlet No. 2, Fieldcraft, Lesson 1.

## LESSON 11.—JUDGING DISTANCE I.—UNIT OF MEASURE METHOD

This lesson introduces the sniper to the most important subject of judging distance at which he must be competent. From the start the sniper must be made to realize that his shots will be in effective unless he estimates ranges to a very fine degree of accuracy.

Details of this lesson will be found in Pamphlet No. 2, Lesson 4 and however thoroughly it was previously taught it should now be taught again.

## LESSON 12.—THE MINUTE OF ANGLE ELEVATION TABLE

### A INSTRUCTOR'S NOTES

#### **Aim**

1. To teach the practical use of the minute of angle elevation table.

#### **Stores**

2. Telescopic sights, a large blackboard, coloured chalks and a service protractor.

#### **Instructional knowledge**

3. Altering in “minutes of angle” is a term which means that the angle of the barrel of the rifle is moved in relation to the target by that amount ( $1 \text{ minute} = \frac{1}{60}$  of a degree) and it becomes apparent that a minute of angle alteration is a very small adjustment indeed.

4. The telescopic sights should be held in the hand rather than be fitted to the rifles as it makes the checking of “answers” to problems easier. The squad should be seated throughout this lesson.

5. Diagrams should be carefully prepared before this lesson starts.

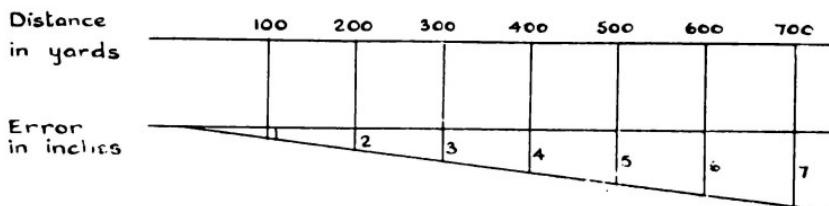
6. Using Fig 26 the following simple illustration should help in the appreciation of the problems involved for the longer ranges; the instructor may prefer to explain it his own way.

7. It is imagined that workmen started to build a road one side of which was out of parallel by one inch at 100 yards. By simple multiplication it is easy to find out what the error at any greater distance would be. It is necessary, only to multiply his error at 100 yards by the number of hundreds of yards at any other distance *e.g.*:

at 400 yards it would be  $1\text{-inch} \times 4 = 4\text{ inches}$

„ 700 „ „ „ „  $1\text{-inch} \times 7 = 7\text{ inches}$

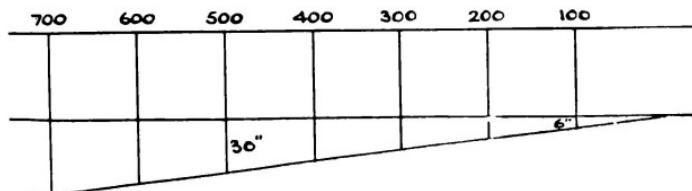
„ 900 „ „ „ „  $1\text{-inch} \times 9 = 9\text{ inches}$ , and so on.



Error illustration (a)

Fig 26

8. Normally a firer is more concerned with solving the problem in reverse since firing usually takes place at longer ranges where it becomes necessary to correct shots which are missing the mark. With the aid of Fig 27 assume that a road was built for a distance of 500 yards before any check took place for alignment of the verges; it was then found that they were out of parallel by 30 inches. It is easy now to find out how much the error was at 100 yards by dividing it by the range in hundreds of yards— $30\text{ inches divided by } 5 = 6\text{ inches}$ .



Error illustration (b)

Fig 27

From this example it is clear that if the error at 100 yards is corrected the road will be correct throughout its length; *this is also true of shots.* In the case of a shot fired at 500 yards being 30 inches wrong (which is equivalent to the shot being 6 inches wrong at 100 yards) it will be necessary, to rectify the error, to move the sight drum six minutes or clicks in the required direction. Two 40-minute periods will be required.

## B CONDUCT OF THE LESSON

### Preliminaries

9. Ensure that Fig 28 is drawn on the blackboard.

### Approach

10. The normal table taught for elevation in basic training is not sufficiently accurate for use by snipers who have to be able to correct their shots almost to the inch. To enable this to be done a table giving adjustments in minutes of angle has been devised which makes possible very accurate alterations. A minute of angle is  $\frac{1}{60}$  of a degree. Give an illustration of degrees using the service protractor.

### Movement of the elevation drum

11. With a copy of Fig 28 on the blackboard explain that there is a varying number of clicks on the drum between ranges. Let the men imitate, where possible, first setting the drum at 0 and then moving it a click at a time till a reading of 100 yards is reached; it will be found that three clicks are used. The turning of the drum up to 1,000 yards by clicks is continued, the men being questioned how many clicks they find between each hundred yards; the number found should correspond with the figures on the blackboard. Explain that as these figures are the basis of the minute of angle table they must be memorized. The process should now be repeated going down the scale from 1,000 yards to 0.

12. Question the squad on the number of clicks between the various ranges and include problems involving several ranges at a time.

13. Mention here that there are 16 clicks either side of 0 on the deflection drum, the use of which will be taught later.

### Applying the table

14. Explain with the aid of Fig 28 that the most important point to grasp is that each click is one minute of angle and that at 100 yards one click (or minute) would move shots one inch on the target in either direction. Give the example of a firer who, on the 100 yards firing point with his sights set at 100 yards, raised them to 200; his shots would be raised four inches on the target. If the same firer, remaining on the 100 yards point, raised his sights to 500 yards his shots would be raised a further 12 inches on the target. Stress that throughout this example the firer has remained on the 100 yards firing point.

15. Question the squad giving small problems of a similar nature.

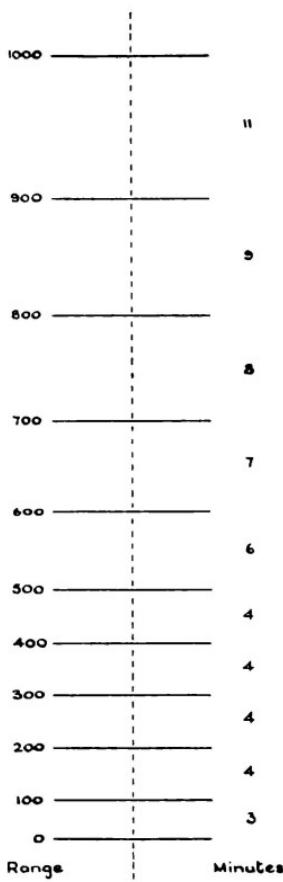


Fig 28.—Minute of angle scale.

#### The effect at longer ranges

16. Using either the example given under "Instructional knowledge" or his own method, the instructor should now explain the effect of alterations at the longer ranges.

17. A rule for alterations to effect a correction can now be framed as follows:—

**Divide the error by the distance and move the range drum that number of clicks**

18. Practise the squad in solving problems making them set their range drums in each case to their answer; below is a guide to framing problems.

Range	Error	Method	Action
300	24"	$\frac{24}{3} = 8$	Move the sight 8 clicks
400	4"	$\frac{4}{4} = 1$	„ „ „ 1 click
600	12"	$\frac{12}{6} = 2$	„ „ „ 2 clicks
400	10"	$\frac{10}{4} = 2\frac{1}{2}$	„ „ „ 2 or 3 clicks

### Advanced examples

19. Again referring to Fig 28 as necessary, explain that occasions may arise where an error in zero develops which causes the firer to have a different elevation on the range drum to that at which he is actually firing, for example it may be necessary when firing at 200 yards to have 400 on the sight to correct shots; this is a rise of 8 clicks or minutes and at any other range a similar allowance of 8 clicks would have to be made. If he were firing at 300 yards the firer would have to have 300 plus 8 clicks which would bring his reading to 500 yards. Mention too that a reduction may have to be made such as when using the Hawkins position, and if this reduction is found to be three minutes at any one range it will be the same at other ranges.

20. Set the squad some problems of an advanced nature.

### Conclusion

21. Questions to and from the squad.
22. Problems on weak points.
23. Sum up.

## LESSON 13.—THE CARE AND CLEANING OF THE SCOUT REGIMENT TELESCOPE

### A INSTRUCTOR'S NOTES

#### Aim

1. To teach the care and cleaning of the telescope.

### **Stores**

2. A scout regiment telescope in its case for each man, oil and flannelette and tables on the scale of one to each four men.

### **Instructional knowledge**

3. The squad should be seated not more than four to a table in order to allow room to lay out the parts. To prevent the lenses getting dirty again each set should be re-assembled immediately after cleaning; doing it this way will also make the identification of the parts easier. Until focussing has been taught the instructor will have to test the telescope (para 18 refers).

## **B CONDUCT OF LESSON**

### **Preliminaries**

4. Issue the cleaning materials.

### **Revision**

5. Question the squad on the method of cleaning the lenses of the telescopic sight.

### **Approach**

6. The method of cleaning the lenses is similar to that for the telescopic sight, but as there are more of them and there is considerable dismantling to be done, it takes much longer. It cannot be too strongly emphasized that unless maintenance of this instrument is most thorough maximum efficiency will not be obtained. Though the scout regiment telescope is the official issue, other types may be encountered; their cleaning and maintenance is similar.

### **Removal from case**

7. With the squad imitating, demonstrate the removal of the telescope from its case; it must first be eased out just far enough for the ray shade to be fully extended, care being taken not to allow the fingers to come in contact with the lens; the telescope may now be fully taken out and placed down very carefully where it cannot possibly fall.

### **Drawing the telescope**

8. Explain that the telescope is a delicate optical instrument and must therefore be handled carefully. With the squad imitating, show the extension of the draws which is done by holding the telescope in the left hand at the hand guard and the right hand holding the eye piece. The telescope is fully extended by pulling and at the same time screwing in a clockwise direction (*see Fig 29*).

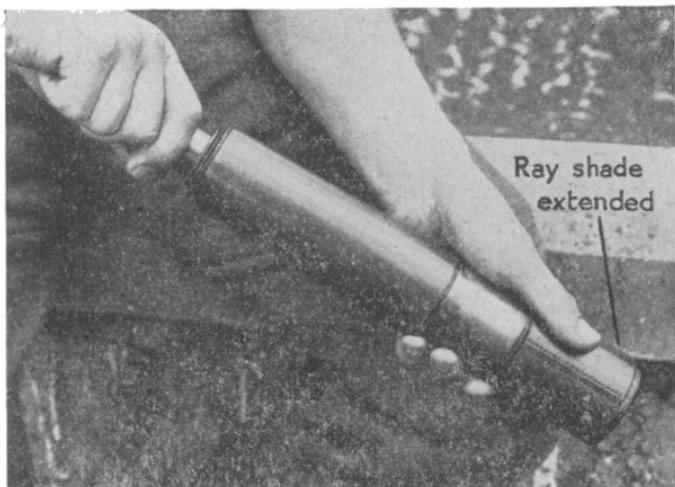


Fig 29.—Drawing the telescope.

9. *Description*.—Explain that the telescope consists of a number of metal tubes the largest of which, covered by a leather hand guard, is known as the body. The smaller tubes, three in number, are known as the *draws*. They should slide smoothly and when being extended or closed should be screwed slightly clockwise to prevent the possible unscrewing of the connecting pieces known as *glands*.

10. Practise and question the squad in drawing and closing the telescope.

#### Stripping and cleaning

11. Explain that in order to avoid wear to the threads and other parts, the telescope should not be stripped unless the lenses require cleaning. The sequence may be varied as experience is gained, but in the early stages the one about to be taught will be found convenient.

All unscrewing for stripping is done anti-clockwise and for re-assembly all threads are screwed up to the right.

12. *The object glass cell*. (See Fig 30). Explain and demonstrate with the squad imitating that this is removed by unscrewing the milled ring of the *cell* keeping the fingers clear of the lens. There are two types of object glass in use, each consisting of two lenses. In the majority of cases these lenses will separate easily when the smaller holding ring has been unscrewed.

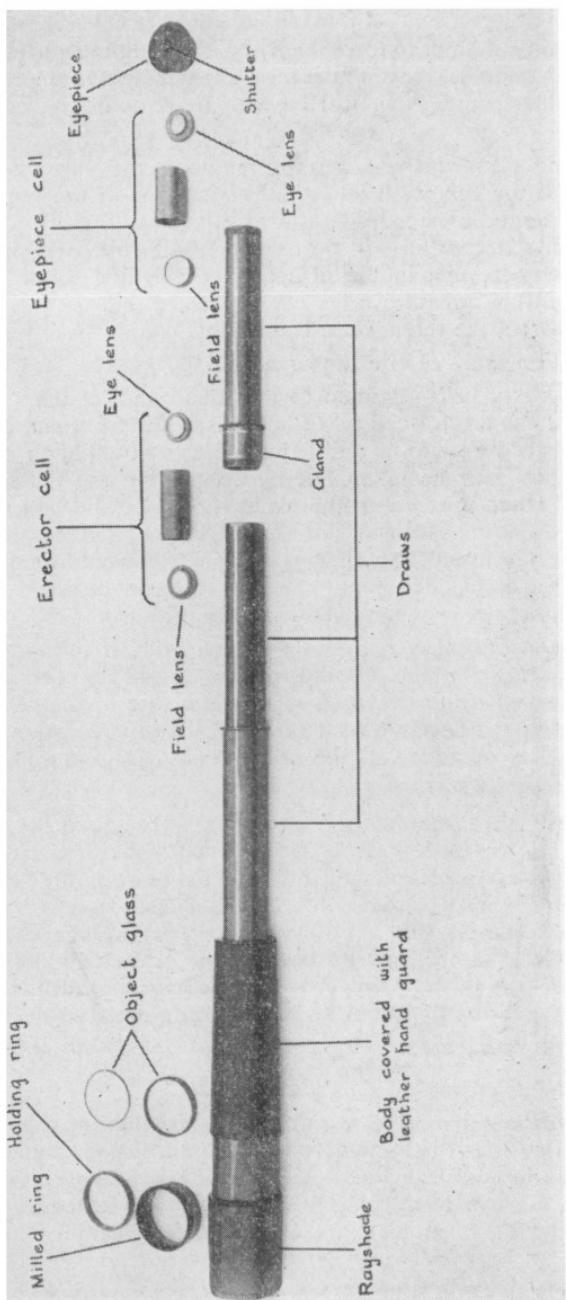


Fig 30.—“Exploded” view of the scout regiment telescope showing the names of the chief parts.

(The fingers must be covered with flannelette or other soft material when handling the object glass). If they do not they are held together by invisible cement and any attempt to force them apart would render them permanently opaque. Dampness may sometimes enter between uncemented lenses causing dullness, and if so, will have to be removed by polishing in the usual way.

13. Having cleaned the lenses, if required, they are re-assembled by ensuring that the thinner lens is the forward one of the two and that the two small diamond shaped cuts are together (*see Fig 30*). If this is not done correctly, focussing will be extremely difficult. To prevent crossed threads when screwing in the object glass cell, first screw anti-clockwise with a downward pressure till a click is heard and then screw up in the ordinary way till the threads are hand tight.

14. Question and practise the squad.

15. *The erector cell*.—Explain to the squad and let them imitate where possible that the erector cell (*see Fig 30*) is at the front end of the smallest draw; if this cell were to be omitted all objects would appear upside down. The rear draw may be taken out by unscrewing the milled edge of the rear gland; when unscrewed, the gland should be slid half way along the draw to prevent its removal. It should be emphasized that the glands contain specially impregnated felt packing which would be disturbed if the gland was removed. It cannot then be replaced by hand and therefore the glands must never be removed from the draws.

16. The erector cell is removed by unscrewing it from the draw. The front or *field lens* (*see Fig 30*) and the rear or *eye lens* (*see Fig 30*) should now be removed by unscrewing. The metal disc in the cell is called the *diaphragm* and the aperture in it the *pupil*. The lenses should be cleaned if necessary, re-assembled in the cell and the cell replaced in the draw.

17. Question and practise the squad.

18. *The eye piece cell and eye piece*.—Show the squad the eye piece with its shutter of coloured glass and with them imitating, demonstrate the removal of the eye piece cell which is done by inserting the finger nail in the recess; this cell also consists of a field and an eye lens the latter being the rear one. They should be unscrewed for cleaning, if necessary, replaced in their cell and the cell placed back in the draw. Finally the shutter is closed to exclude dust. Explain that after any dismantling the telescope will always be tested by focussing before being replaced in its case.

19. Question and practise the squad.

#### **Replacing the telescope**

20. Explain and demonstrate with the squad imitating that to replace the telescope in its case it must first be fully closed. The eye piece is placed in the case first and a clean piece of flannelette size approximately 4 inches by 6 inches is folded and placed in the lid; this will protect the object glass when the lid is tightened, and also serve as a cleaning cloth.

### **General remarks on the care of the telescope**

21. Explain that if the telescope is allowed to become wet the lenses will become fogged; the remedy is to strip and clean the instrument. It may even be necessary, after very wet conditions, to remove all the cells and leave the telescope so that air may dry the inside surfaces of the body and draws. The telescope must never be dried before a fire or damage may result.

22. No attempt must ever be made at rubbing the black interior surfaces of the instrument or the efficiency of the telescope will be impaired.

23. Great care must be taken never to allow the telescope to receive any kind of blow as the interior surfaces will be damaged and dents will prevent free sliding of the draws.

24. Question the squad.

### **Conclusion**

25. Questions to and from the squad.

26. Further practise of weak points.

27. Sum up.

## **LESSON 14.—THE EMPLOYMENT OF SNIPERS (Lecture)**

The notes which follow should be found useful as a basis for a lecture to the snipers under training.

### **The need for careful organization**

1. *The best results* from sniping are only achieved when the employment of snipers is carefully organized. For this reason sniping tasks should normally be planned at battalion or higher level though for special specific purposes they may be decentralized to companies.

2. Snipers are largely a weapon of *opportunity* and the broadest principles only can be given as to their use. These principles must be applied with imagination, guided by a sound grasp of snipers' characteristics.

### **During an advance**

3. *When conditions are mobile*, snipers can often stalk and shoot enemy posts that cannot be located or are difficult to deal with by other means. Isolated pillboxes or machine gun posts holding up an advance have, on many occasions, been overcome in this way.

4. Under favourable circumstances, infiltration of snipers through the enemy position may be successful. When this is done before an attack, they may give great assistance by shooting enemy weapon crews from the rear; necessary precautions will naturally have to be taken on such occasions to prevent them becoming casualties from our own fire plan.

5. When interference is met with from enemy snipers left to delay an advance, our own may be of assistance in a counter sniper role.

#### **Dominating "No man's land"**

6. When a battle becomes *stabilized*, the major role of snipers is to dominate the "no man's land" between the opposing forces, the main aim being to prevent enemy sniping or front line observation and to interfere as far as possible with his movements and patrolling activity.

7. The results of such a policy, if carried out offensively by well-trained and organized snipers will do more than inflict casualties and cause inconvenience to the enemy; it will have a marked effect on the security and moral of our own troops and will result in a constant source of information about the enemy. Such policy, too, will have a demoralizing effect on the opposing forces.

8. The method by which this aim may be achieved will be governed by many factors, such as the nature of the ground, the distance between the opposing forward troops, the existence of minefields and other obstacles, the degree of initiative shown by the enemy and the number of snipers available.

9. *Disposition of snipers.*—When the enemy positions are within range of accurate rifle fire, snipers should operate from hides or prepared positions within the line of our own forward troops; the whole of the battalion front should be covered as far as possible by overlapping arcs. When the enemy positions are beyond the normal range for accurate rifle fire, snipers should operate from posts established in front of our own forward troops; this will enable them to check enemy patrolling and other activities in "no man's land." It will also provide forward observation posts to gain useful information.

10. *Strain.*—Often it will only be possible to get snipers to and from their positions during darkness and this inevitably entails great strain so that the question of reliefs requires special consideration.

#### **Allotment of posts**

11. All posts should be personally reconnoitred and allotted by the officer in charge; it is also his responsibility that full information about our own and the enemy minefields be given to the snipers.

#### **Relieving of posts**

12. This should be carried out in the same way as a patrol would operate; all troops must be warned of the activities of snipers on their front or casualties among these valuable men will occur from our own fire. They should go out and return by a given route and at a stated time whenever this is feasible. It may be possible to arrange supporting fire from our own forward troops when the snipers are going to their positions; this will serve to distract the enemy's attention from the main task in hand.

### **Great distances between sides**

13. When the distance between opposing forces is very great and the enemy has no very highly organized defence, snipers can be sent out in front of our own lines and work more in beats than from static posts; they should, under these conditions, stalk whatever enemy positions they can find.

14. It may sometimes be worth while sending a *small patrol* with a party of snipers. This body would establish itself in "No man's land" as a firm base from which the snipers could operate.

### **Operating times**

15. Careful consideration must be given to the most suitable times for the snipers to operate as well as to the place from which they should work. The limited numbers available make it impossible to have them operating at all times and frequently the best chance of a shot will be in the half light of dusk or dawn or by moonlight. This will particularly be so when superiority of fire has driven the enemy to ground during daylight or when there is much enemy patrol activity at night.

### **Use to intelligence**

16. The special training in observation that the sniper receives, allied to the very nature of his work, result in him providing an invaluable contribution to intelligence. Making efficient use of his telescope he may see more than any other OP and in the past snipers have often been of real service to gunner observers. The result of his observation must be the subject of a special report at the end of a tour of duty.

### **Avoiding other tasks**

17. The training of snipers in fieldcraft will make him a valuable soldier for many tasks other than sniping alone, but the temptation to use him for all sorts of patrolling and scouting work, that can be done by less skilled men, must be resisted, otherwise, since such work can be very strenuous, the sniper will frequently not be available for his proper role. This point of view must never deter those responsible from using the sniper in bold and original types of work; such tasks of opportunity can, if properly planned, yield high dividends particularly against a retreating and disorganized enemy and on occasions when the country lends itself to infiltration.

### **Sniper pairs**

18. Snipers normally achieve the best results when operating in pairs for the following reasons:—

- (a) One man cannot observe and shoot at the same time and it is a great help for him to have someone who can find and indicate suitable targets.

- (b) Observation, especially with the telescope, involves great strain and can only be continued for limited periods; the pair must, therefore, be interchangeable.
- (c) It is seldom possible for the firer to observe the strike of his own shots but the observer will generally be able to do so and give corrections if necessary.
- (d) Mutual protection is afforded specially during movement.
- (e) The moral effect of companionship, in an otherwise lonely task, is of considerable value.

#### **Occasions for single action**

19. There will be occasions when, at *very close quarters* with the enemy, one man would be well advised to stalk alone with the other member of the pair covering him from some distance behind; in a tricky situation there will thus be less chance of the one man being spotted.

#### **LESSON 15.—MOVEMENT WITHOUT RIFLES AND ELEMENTARY NIGHT MOVEMENT—REVISION**

In war the sniper must be able to move about the battlefield without being seen by the enemy. He must now realize the importance of correct movement and learn the basic principles.

If the man's early training has been very thorough it may not be necessary to teach him these lessons again from scratch, but to take them as a revisionary period.

Details of the lessons referred to will be found in Pamphlet No. 2, Lesson 13 and Lesson 19, paragraphs 12, 13, and 14.

Though "rifles" are part of the stores required for Lesson 19, snipers doing this period will not need them.

#### **LESSON 16.—MOVEMENT WITH THE SNIPER RIFLE A INSTRUCTOR'S NOTES**

##### **Aim**

1. To show the necessary variations to the normal methods.
2. To teach certain additional factors.

##### **Stores**

3. Rifles and telescopic sights.

##### **Instructional knowledge**

4. The movements dealt with in this lesson are to be regarded as a "standard" set which serve as a basis for teaching. Men need not follow the detail to the letter but should adapt them according to their physique and as the situation demands. The "roll" is not included in this lesson as the risk of damaging the sight when fitted is considerable.

## B CONDUCT OF LESSON

### Preliminaries

5. Normal safety precautions.
6. Fit the telescopic sights and remove web belts.

### Revision

7. Movement without arms—day and night (Fieldcraft, Pamphlet No. 2, Lessons 13 and 19).

### Approach

8. The sniper rarely has the benefits of covering fire or smoke screens to assist him to get within certain killing distance of his enemy. If he is to move unseen and unheard, he must therefore develop movement to the pitch where it becomes an art.

### The walk

9. Explain and demonstrate, with the squad imitating where possible, the two methods of carrying the rifle when walking (*see Fig 31*).



Fig 31.—Two methods of carrying the rifle when walking.

The safety catch may be forward or applied as circumstances dictate; the reading of drums must be checked after any movement.

**10. Practise the squad.**

**The monkey run**

11. Explain that the usual method is quite unsuitable when the telescopic sight is fitted to the rifle as there is great danger of its being damaged and a modified method must be used. With the squad imitating, show that the sling is adjusted on the arm or secured in the left hand; means of propulsion is obtained by the left elbow and right hand in conjunction as shown in Fig 32. The safety catch should be applied when using this means of movement except in emergencies.

**12. Practise the squad.**



**Fig 32.—The monkey run.**

**The leopard crawl**

13 *Normal*.—Explain and demonstrate, with the squad imitating, that the rifle should be held by both hands in an underhand grip with the deflection drum uppermost to prevent its disturbance. (*See Fig 33*). The sling should be adjusted on the arm as it allows the firing position to be adopted quickly; the safety catch should be positioned to suit circumstances.



Fig 33.—The leopard crawl.

14. *Russian version*.—Explain that the only difference here is the method of carrying the rifle (*see Fig 34*). It is especially suitable when using a narrow approach such as a ditch as the rifle does not protrude greatly beyond the width of the body.

However, the drums are more liable to accidental movement and it takes slightly longer to adopt a firing position.



Fig 34.—The leopard crawl—Russian version.

Demonstrate with the squad imitating that the rifle is held with the right hand by the forward sling swivel, butt to the rear and the rifle, turned on its left side, resting along the arm.

15. Practise the squad.

**The stomach crawl**

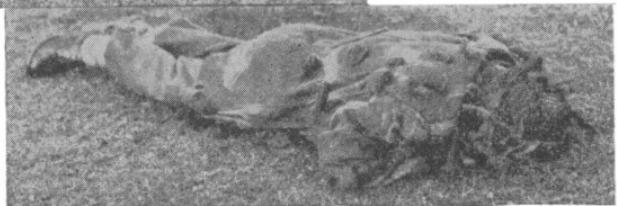
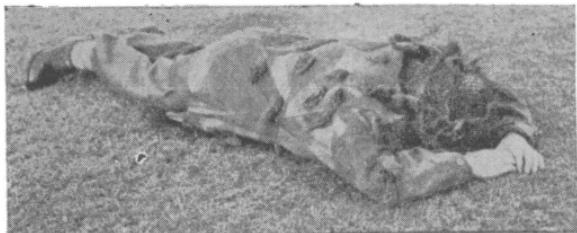


Fig 35.—The stomach crawl—without and with the rifle.

16. Explain that this crawl is slow and tiring and should, therefore, only be used when the utmost caution is necessary; it is particularly useful when the stalker is forced to use very low cover or crawl in the open. Demonstrate that the whole body is pressed as close to the ground as possible and movement obtained by pulling with the forearms and at the same time pushing with the *insides* of the feet, the heels being kept on the ground; the sling should be adjusted on the arm, the rifle held as near normally as possible with bolt uppermost and the safety catch positioned to suit circumstances. (See Fig 35).

Explain that using this crawl it is natural and desirable to look down but frequent pauses must be made for observation.

17. Practise the squad in the stomach crawl.

#### **Turning**

18. Explain that it is often necessary to turn completely round to withdraw from a position of observation or firing. When extreme care is necessary the following method will be found useful. Demonstrate with the squad imitating that the body is eased as far to the right as possible keeping the legs together; the left leg is then moved as far to the left as possible, the right leg is now closed to the left leg and the body moved still further to the right. These movements are repeated as necessary till the body is facing about. The movement can, of course, be done equally well moving to the left; it is advisable, if conditions permit, to have the safety catch applied when making this turn. (See Fig 36).

19. Practise the squad.

#### **Withdrawing without turning**

20. Explain that it is sometimes desirable to withdraw without turning about. Demonstrate, with the squad imitating, that this is accomplished by doing the stomach crawl in reverse, pushing with the forearms and pulling with the inside of the feet.

21. *Night movement.*—Explain that all the movement and turning methods are adequate at night but special care must be taken that the rifle does not receive knocks and that the telescopic sight is carefully protected.

#### **Conclusion**

22. Questions to and from the squad.

23. Final practice of weak points.

24. Sum up.



Fig. 36—Turning.

**LESSON 17.—USE OF BINOCULARS AND SCOUT REGIMENT TELESCOPE**

**A INSTRUCTOR'S NOTES**

**Aim**

1. To show the comparison of the capabilities of binoculars and the scout regiment telescope.

2. To teach the correct use of binoculars.
3. To teach the correct use of the scout regiment telescope.

### **Stores**

4. Telescopes in their cases, aiming rests on the scale of one to each man, small notice boards or posters attached to boards. Some items of small equipment such as bren barrels, rifle bolts, steel helmets, etc. A diagram of "aiming" a telescope.

### **Instructional knowledge**

5. The preparation of the siting of the objects must be thorough and the wording of the notice boards, etc, unknown to the squad. As a guide, black lettering 1-inch high and  $\frac{1}{4}$ -inch thick on a white ground can be read at 200 yards with the telescope in a rest but will be undecipherable through binoculars or an unrested telescope.

Two 40-minute periods are required.

## **B CONDUCT OF LESSON**

### **Preliminaries**

6. Make sure that all the objects set out are at the desired degree of visibility to suit the stages of the lesson.
7. See that the object glasses are clean.

### **Approach**

8. Snipers are issued with binoculars and a telescope both of which possess certain advantages in use in observation work; it is necessary to learn how to use both instruments to their best possible advantage.

### **Binoculars**

9. Explain that the chief advantage of binoculars is their general handiness and wide field of view which enables an area to be searched more quickly, if not in such detail, as would be possible using the telescope. The magnification is about 6-8 times and will be found marked on the body. For night work binoculars are superior to the telescope. No stripping of the binoculars is permitted. The lenses are cleaned in the same way as those of the telescope. The vertical lines on the lenses can be used for measuring degrees, the higher ones being set at one degree intervals, and the smaller ones, which are between them, denoting half degrees.

10. *Carriage of binoculars.*—Explain and demonstrate with the squad imitating that it is best to wear glasses slung round the neck inside the smock, which protects the eye piece from damage, but does not hinder their immediate use. To prevent the binoculars absorbing damp the eye pieces should always be screwed fully down when they are not in use.

11. *Focussing binoculars.*—Explain that focussing is the adjustment of the lenses to suit the eye sight of the user in relation to the object being viewed. Explain and demonstrate with the squad imitating the method of adjusting the lenses on the two types normally available. One model has the two eye pieces under one control which is a milled wheel set in the centre column and focussing is done by moving the control till the view obtained is sharp and clear. On the more common model, each eye piece is focussed separately and this is done by closing each eye in turn and moving the eye piece in use till a sharp, clear and largest possible view is obtained. The reading on each eye piece should be memorized to enable future focussing to be carried out quickly. The field of view in all types of binoculars can be narrowed or widened by opening or closing the bracket; the widest possible position to suit the eyes should always be used and the reading memorized.

12. Practise the squad in quick adjustment of the binoculars.

13. Practise the squad, using binoculars, in locating objects which are indistinguishable to the naked eye.

### The telescope

14. Explain that the magnification of the telescope is 20 times which permits very detailed searching of the ground at considerable distances, but the small field of view afforded calls for very skilful handling; the telescope will pick up objects in shadow or those that are lightly camouflaged which would not be seen with the binoculars.

15. *Carriage.*—Explain and demonstrate with the squad imitating that the telescope is carried in its case with the strap over one shoulder and the lid facing towards the front to facilitate quick removal of the telescope when required. (See Fig 37).

16. *Taking the telescope from its case.*—Explain that in bright sunlight the reflection from the object lens can be seen at great distances and every effort must be made to prevent the enemy seeing this; the telescope is, therefore, kept facing downwards as it is withdrawn and at the same time the ray shade should be fully extended.

17. With the squad imitating show how this is done.

18. *Focussing the telescope.*—Explain and demonstrate using aiming rests with the squad imitating that the telescope is first fully drawn. The eye must be close up to the eye piece and the rear draw moved forward by a gentle clockwise screwing action, making sure that the other draws do not move, till the clearest and largest possible view is obtained. Explain that the eye will very quickly adjust itself to an *incorrect* focus; eye strain will soon result if the telescope is used in this condition. For this reason, until the men have gained some experience at focussing correctly, they should be encouraged to look away frequently or the eye will become tired. If both eyes can be kept open when using the telescope they will become

less tired and each eye in turn should be used. Should the eyes be of different strengths a separate focus will have to be used for each. When they have obtained the best possible focus make the men mark the draw with a fine scratch as close to the gland as possible as a guide to obtaining a quick focus. Explain that in very bright light the eye piece shutter should be drawn over to reduce glare.



**Fig 37.—Carrying the cased telescope.**

**19. Practise the squad in focussing using each eye in turn and in keeping both eyes open.**

#### **Locating an object**

**20. Explain that owing to the small field of view obtained with the telescope, some men experience difficulty in finding the ground they wish to search; it is recommended that the top of the eye piece and ray shade are "aimed" at the area and it will then be found that the required area is in the field of view. (See Fig 38).**

**21. Practise the squad.**



Fig 38.—“Aiming” the telescope.

#### The importance of steadiness

22. Explain that the telescope will not reveal the maximum detail unless it is held perfectly steady; the following proof should be applied:—

- (a) Make the men try and read the lettering on the board using binoculars only. (They will not be able to read the lettering).
- (b) Make the men try to read the lettering on the board using the telescope supported only by the hands and without any kind of rest. (They should not be able to read the lettering).
- (c) Let the men view the same notice board through the telescope placed in an aiming rest. (They will be able to read the lettering).

23. Practise the squad using aiming rests in locating objects which are sufficiently concealed to prevent them being seen unless the telescope is held perfectly still.

#### Conclusion

- 24. Questions from and to the squad.
- 25. Final practice of weak points.
- 26. Sum up.

### LESSON 18.—SHOOTING 1.—GROUPING IN THE MINIATURE RANGE

The sniper having been revised in the basic rifle lessons should now be given a shoot in the miniature range to consolidate these points and by means of a grouping practice, eliminate any faults.

### LESSON 19.—MAP READING, CONVENTIONAL SIGNS, SCALES AND RELIEFS

The sniper must appreciate that a map is a plan or birds eye view of the ground drawn to scale; he must understand the signs and symbols used to convey information on the map.

He must be able to measure distances on the map both across country and along roads, quickly and accurately and convert them into ground distances using the scale line on the map or other means.

He must also accustom himself to estimating how long it will take to reach any given point on a route at a given speed.

He must be able to pick out high and low ground and recognize the commonest ground features; he must also thoroughly understand the inter-visibility of points.

These aspects of map reading are covered in the publication "Notes on Map Reading, 1929," the man's previous training will entirely govern the time necessary to devote to this subject.

## LESSON 20.—HANDLING THE TELESCOPE

### A INSTRUCTOR'S NOTES

#### **Aim**

1. To teach methods of steadyng the telescope in the field.

#### **Stores**

2. Each man should have a telescope in case, a rifle and a forked stick.  
A number of small notice boards.

#### **Ground**

3. Various types of cover should be available.

#### **Instructional knowledge**

4. The purpose of the small notice boards is to provide each man with a positive means of checking whether his telescope is sufficiently steady in any position; they should be placed out so that the lettering cannot be read unless the telescope is perfectly still.

## B CONDUCT OF LESSON

#### **Preliminaries**

5. Normal safety precautions. Ensure that the object glasses are clean.

#### **Revision**

6. Question the squad on focussing the telescope and on locating an object.

#### **Approach**

7. It is essential that a means of steadyng the telescope be found no matter what position the observer has to adopt. This lesson deals with a number of "standard" positions, but many variations will be needed to steady the telescope under differing conditions.

#### **Steadying the telescope**

8. *Over cover.*—Explain and demonstrate with the squad imitating that the body must be adapted to the height of the cover; it is best to lie down but movement of the telescope from this position is rather limited. Both

elbows should be rested if possible; the telescope may be held in the hand which may be on the cover. The observer must take care not to expose himself unduly. (See Fig 39).



**Fig 39.—Steadying the telescope lying over cover.**

9. Practise the squad.
10. *Round cover*.—With the squad imitating explain and demonstrate that the telescope is held with the hand guard rested against the cover.
- 11 Practise the squad.
12. *Using a forked stick*.—Show the use of the forked stick for obtaining steadiness and let the squad try this method. (See Fig 40).



**Fig 40.—Steadying the telescope lying, using a forked stick.**

**13. Using the rifle:—**

(a) *Standing*.—Explain and demonstrate that a fair amount of steadiness may be obtained by resting the butt of the rifle on the thigh and by holding the telescope and rifle together in one hand. (See Fig 41).

The feet should be well apart.

Practise the squad.



Fig 41.—Steadying the telescope standing, using the rifle.

(b) *Sitting*.—Explain and demonstrate with the squad imitating that the head, and, if possible, both elbows should be rested. The rifle should be held vertically with the butt on the ground and the telescope and rifle held together in one hand. (See Fig 42).



Fig 42.—Steadying the telescope sitting, using the rifle and a back support.

14. *When no aid is available.*—Explain that there may be occasions when no aid is available other than the body and the telescope case. With the squad imitating demonstrate that the observer should lie on his side with his forward hand holding the telescope resting on the thigh. The head must be supported by the telescope case or low bank, etc. The eye piece should be held between the first and second fingers with the thumb resting against the nose. (See Fig 43). When the observer feels strained in this position he should change to his other side.



Fig 43.—Steadying the telescope lying on the side.

**15. Practise the squad.**

**Conclusion**

- 16. Questions to and from the squad.**
- 17. Further practice of weak points.**
- 18. Sum up.**

**LESSON 21.—SHOOTING 2.—ZEROING IRON SIGHTS  
REVISION**

The sniper must not lose sight of the fact that his rifle is fitted with iron sights and that they may have to be used under adverse climatic conditions when the 32 telescopic sight is liable to be ineffective. It is important, therefore, that the iron sights are kept in zero.

Details of conditions for zeroing will be found in Pamphlet No. 3, Appendix A.

**LESSON 22.—JUDGING DISTANCE 2.—THE APPEARANCE  
METHOD**

This useful method of obtaining ranges should be taught to the sniper even though he has been taught it in his basic training.

Details are contained in Pamphlet No. 2, Lesson 5.

**LESSON 23.—ALLOWANCES FOR WIND AND MOVING TARGETS  
A INSTRUCTOR'S NOTES**

**Aim**

- 1. To teach the use of the deflection drum.**
- 2. To teach how to calculate the allowance for wind.**
- 3. To teach the allowance necessary for moving targets.**

**Stores**

- 4. Telescopic sights, blackboard and coloured chalks.**

**Instructional knowledge**

**5. The great advantage of the telescopic sight when allowing for wind is that by turning the deflection drum the firer is enabled to take a central aim thus overcoming loss of accuracy which almost inevitably occurs when "aiming off."**

**6. The squad should be comfortably seated and the "answers" to problems given by setting the deflection drums.**

- 7. Two 40-minute periods are required.**

## B CONDUCT OF LESSON

### Preliminaries

8. See that the necessary diagrams are on the blackboard.

### Revision

9. Give a few problems on the minute of angle table.

### Approach

10. Because of the greater accuracy required of him, the sniper must be able to correct the effect of wind to a higher degree than the normal infantry-man. He has two things to help him; the deflection drum on his telescopic sight and a more detailed wind table showing the necessary allowances.

### Use of the deflection drum

11. Explain and demonstrate, while the squad view through their own sights, that the pointer moves laterally when the milled edge of the deflection drum is turned; explain that if the shots fall to the left of the target the drum is turned left also (anti-clockwise). The factors governing errors in deflection are the same as for elevation so it follows that to correct an error in deflection the method is the same as before, *i.e.*, divide the error by the hundreds of yards in the range at which firing is taking place. Give the squad some examples of this on the following lines:—

(a) Firer at 200 yards, error 8 inches left,  $\frac{8}{2} = 4$  clicks which means that, in this case, the drum is moved anti-clockwise or to the left 4 clicks.

(b) Firer at 400 yards, error 28 inches right,  $\frac{28}{4} = 7$  clicks so that the drum must this time be moved 7 clicks right or clockwise.

12. Give the squad practice in similar problems making them put their "answers" on the deflection drum.

### Allowance for wind

13. Explain that the three factors to be considered are the strength and direction of the wind and the range at which firing is taking place; these should be dealt with in that order.

14. *Strength.*—For practical purposes three strengths of wind only need be considered:—

A 5 mph wind known as *Mild*.

A 10 mph wind known as *Fresh*.

A 20 mph wind known as *Strong*.

Winds of greater strength than these are comparatively rare and are therefore not included. It is most important to be able to assess the strength of the wind by its effect on the face or on surrounding objects; considerable experience is necessary to achieve success. Flags on ranges

provide a ready guide of wind strength (*see Fig 44*) always remembering that a wet flag, being heavier than a dry one, will tend to cause [an underestimation. When using flags it is best to choose one the height of which is as near as possible to the path of the bullet and as near as possible to the start of its flight. This is because the bullet will start to drift the moment it has left the barrel and will continue on an incorrect course even though the wind later drops completely.

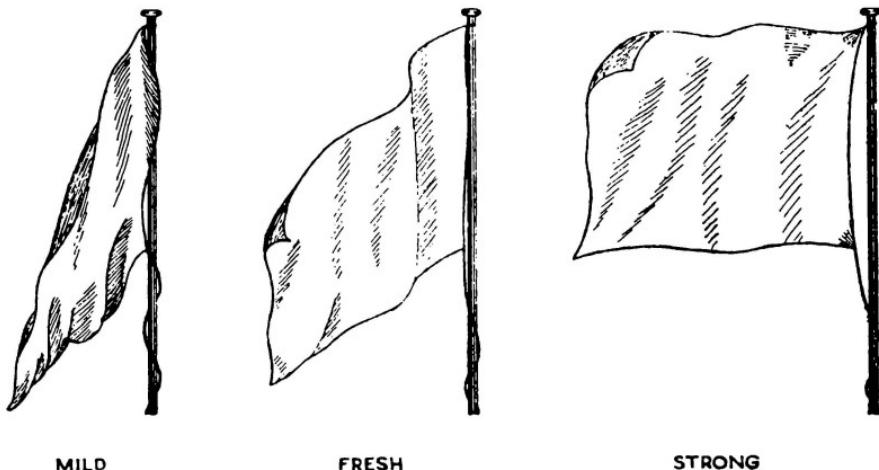


Fig 44.—The effect of wind on flags.

15. Question the squad on wind strengths and the use of flags, etc.

16. *Direction*.—Explain that winds blowing at right angles to the line of flight of the bullet have the greatest effect; oblique winds have half the effect and head or tail winds have virtually no effect at all except at extreme ranges which need not be considered by snipers.

17. *Range*.—Explain that the effect of any wind is finally decided by the distance the bullet will have to travel while exposed to it. In the case of the sniper the first figure of the range is a useful basic figure upon which to build the other calculations necessitated by direction and strength.

18. Question the squad.

#### The wind table

19. Explain with the aid of a diagram (*see Fig 45*) that the wind table of allowance is based on the fact that a fresh cross wind will require the same number of minutes as the first figure of the range from which the bullet is fired, for example, if there is a fresh cross wind blowing and the

firer is at 300 yards, 3 minutes or clicks will be necessary; similarly 5 clicks or minutes will be required at 500 yards; mild winds require half the allowance at any range and strong winds double the allowance. (See Fig 46). Any figure previously arrived at will have to be halved if the wind blowing is oblique.

Strength	Distance in yards						Minutes required
	100	200	300	400	500	600	
Fresh (10 mph) ...	1	2	3	4	5	6	

Fig 45.—Basic wind table.

Strength	Distance in yards						Minutes required
	100	200	300	400	500	600	
Mild (5 mph) ...	—	1	1½	2	2½	3	
Fresh (10 mph) ...	1	2	3	4	5	6	
Strong (20 mph)...	2	4	6	8	10	12	

Fig 46.—Wind table for three types of wind.

Half minutes appear in the table; the sight can only be adjusted in full minute clicks and the sniper will have to adjust his drum either way to the nearest half minute.

### Using the table

20. Explain that there is a number of ways in which the wind allowance can be arrived at, but the following way, being easy to apply, is a suggested sequence:—

- (a) *Range*.—Use the first figure as a basis.
- (b) *Strength*.—May cause the figure arrived at above to be halved or doubled.
- (c) *Direction*.—If oblique will halve the result of the figure arrived at from (a) and (b) above.

(d) *Drum.*—The drum is turned left or anti-clockwise for shots falling left, which would be caused by a wind blowing from the right; therefore the rule is—wind from the right turn the drum to the left—wind from the left turn the drum to the right.

21. Using the deflection drum for “answers” give problems for wind allowances.

#### **Using the table when the telescopic sight is not fitted**

22. Explain that on rare occasions the sniper may have to use a rifle with the ordinary leaf backsight; he may still make use of the minutes of angle wind table as follows:—

- (a) He should first decide what allowance he would make if using the telescopic sight.
- (b) He should then calculate the number of inches this allowance would give by multiplying the number of minutes arrived at by the first figure of the range from which he is firing, eg, 3 minutes at 300 yards gives him 9 inches, he should then aim off that amount; this method is more accurate than just aiming off 1, 2 or 3 points of aim.

23. Question the squad and practise them by giving problems.

#### **Allowing for moving targets**

24. Explain that the method of “swinging past the target” taught in previous training is not suitable when using the telescopic sight because of the clarity of aim, etc, a definite lead according to the distance and speed of the target must be chosen. The rifle must still be swung with the target and fired without checking the swing otherwise the lead will be diminished; mention that 300 yards is the maximum range at which it may be reasonably expected to get results at a moving target. The following approximate “Lead” table for a walking man should be studied and memorized:—

At 100 yards aim at the leading edge of the target.

At 200 yards aim 6 inches in front of the leading edge of the target.

At 300 yards aim 18 inches in front of the leading edge of the target.

The “leads” should be doubled for a man running.

#### **Correction of errors**

25. It should now be possible to correct errors in either elevation or deflection or a combination of both; give the squad problems involving combinations of lateral and vertical errors.

#### **Conclusion**

26. Questions from and to the squad.

27. Final practice of weak points.

28. Sum up.

## LESSON 24.—JUDGING DISTANCE 3.—BRACKETING AND KEY RANGES METHOD—THE HALVING METHOD

### Bracketing and key ranges methods

1. The importance of accuracy in estimating ranges cannot be over emphasized in the case of the sniper. He will often have to judge distances over difficult ground and under dangerous conditions.

These two advanced methods are described in Pamphlet No. 2, Lesson 6 and should be taught again now to the sniper under instruction.

### The halving method

2. In addition to the other two methods the men should be taught the "halving" method of obtaining ranges in which a spot halfway to the target is chosen and the range to it judged by any of the other methods taught; the range so obtained is then doubled.

## LESSON 25.—ZEROING THE TELESCOPIC SIGHT A INSTRUCTOR'S NOTES

### Aim

1. To teach the theory and mechanics of zeroing a sniper rifle.

### Stores

2. Rifles, telescopic sights, blackboard, target, drill cartridges, one rifle rest.

### Instructional knowledge

3. The following points should be noted before zeroing takes place:—

- (a) *Examination before test.*—The rifle and the telescopic sight must be examined by the armourer to ensure that both are undamaged, that all screws are tight, that the rifle is stocked up properly and that the barrel is free from metallic fouling.
- (b) *Weather conditions.*—The ideal day to choose is one on which there is no wind and on which the light is very good.
- (c) *Range.*—Zeroing should take place at 100 yards.
- (d) *Position.*—It being desirable to zero the rifle in a position in which it will be used most frequently, a combination of the sling and cover should be used to get a true zero: the wrist and forearm only should be rested against the cover.
- (e) *Targets.*—Any suitable target with a one-inch rectangular aiming mark.
- (f) *Aiming.*—The point of aim will be the lowest central portion of the aiming mark.

- (g) *The shoot.*—Two warming shots will first be fired into the bank and then a group of five rounds: the necessary standard to be obtained is a three-inch group or better.
  - (h) After any alteration has been made the rifle should be re-tested and corrected as necessary.
  - (j) No lateral or vertical error will be left.
4. When teaching paras 10, 11 and 13 the instructor should make the fullest possible use of question and answer.

## B CONDUCT OF THE LESSON

### Preliminaries

5. Normal safety precautions.
6. One rifle is placed in an aiming rest; a group is marked on the target.

### Revision

7. Question the squad on the elevation and deflection tables.

### Approach

8. The sniper may be called upon at any time to hit a very small target under difficult conditions. Therefore his rifle must be zeroed to very fine limits so that a shot from it will hit the point aimed at at any range with the correct readings on the drums.

### Method of zeroing

9. Explain that, as was done with iron sights, a group of five rounds is fired but that the group must not exceed a three-inch circle. If the group is not on the point of aim it must be moved there by use of the two drums. The test is not complete till this is accomplished *and there is a correct reading on the sights, eg, the deflection drum at zero and the elevation drum at 100, and also a "check" group has been fired.*

### *Zeroing for elevation—low group*

10. For the purpose of explaining this it will be imagined that a sniper, with his sights at 100 has fired a group at 100 yards, the MPI of which was eight inches low. Explain that this is eight minutes low and as there are eight minutes between 100 and 300, the sights should be put to 300 and if another group is now fired it should form in the correct place; but the reading of the drum is 300 whereas it should be 100 and this is most undesirable. To correct this state of affairs the nose of a round is placed in the recess on the range scale and the milled edge of the drum being prevented from moving by holding it, the range scale is turned till the correct readings of 100 is obtained.

*Zeroing for elevation—high group*

11. If it is found that the 100 yard sight reading causes the group to form high, alter the sights the required number of minutes to lower the MPI, then holding the drum steady, adjust the range scale to the correct reading. For example, if, with the range scale set at 100 yards, the MPI forms five minutes high, turn the drum anti-clockwise five clicks, then adjust the reading on the range scale to 100 yards. Occasionally, it may be found that there are not sufficient minutes below 100 yards to make a correct adjustment. In such a case, the equipment should be exchanged.

In the former case the example of a twelve-inch high group may be taken; this is twelve minutes out. Again holding the drum still, move the scale up twelve minutes to 400, with the nose of a round; the drum is next turned down to 100 and the group should be in the correct place.

12. Questions and practise the squad giving them problems.

*Zeroing for deflection*

13. Explain that zeroing for deflection is very similar to zeroing for elevation; the deflection drum should be set at zero and a group fired. If a group four inches left is obtained which is the equivalent of four minutes left, the drum is turned four minutes or clicks to the left *i.e.* into the error, again holding the milled edge of the drum still and using the nose of a bullet move the scale till it reads zero. For a right group all actions should be carried out the opposite way round. A check group must be fired after an alteration.

*Adjustments of errors for the Mark 2 Telescopic sight*

14. As with the Mark 3 sight the drums must first be altered to bring the MPI to coincide with the point of aim.

15. Using the tools No. 32 Telescopic Sight No. 1, Mark 1 and No. 2, Mark 1 and ensuring that the central pin of the drums is not allowed to move at all during the process:—

- (a) The jaws of the No. 1 tool are applied round the drum and the projection on the central pin is engaged with the slot of the plug.
- (b) The jaws are now tightened and with the aid of the No. 2 tool the clamping ring is loosened.
- (c) The tension on the jaws is slightly eased and any necessary adjustment made with the fingers until the correct reading for the range is obtained on the drum or in the case of the deflection drum the "0" is opposite the pointer.
- (d) The jaws of the No. 1 tool are again tightened and the clamping ring done up with the No. 2 tool.

16. As in all cases of alteration to either drum a check group must be fired and if necessary repeated till the alterations are finally confirmed.

### *Checking without zeroing*

17. The sniper may not have the opportunity of zeroing his rifle properly as often as he would like; he must, therefore take every opportunity of checking his zero by firing at some small mark.

18. Practise the squad in carrying out alterations giving practical problems.

### **Check when zero badly out**

19. It may sometimes occur during a zero shoot that the sniper rifle misses the target at 100 yards. In order to get the shots somewhere near the target and the sight adjusted it will be necessary to remove the bolt from the rifle and, looking down the barrel roughly align the bore on the centre of the target. Holding the rifle very firmly look through the telescopic sight and adjust the pointer till it is as near the centre of the target as possible; keeping the drums still, move the scale to read correctly, *i.e.*, 100 and zero. Normal zeroing and final adjustment should now be made.

### **Iron sights**

20. The iron sights too must be zeroed for occasions of bad visibility when the telescopic sight cannot be used or is out of action for one reason or another.

### **Conclusion**

21. Questions to and from the squad.
22. Final practice.
23. Sum up.

## **LESSON 26.—RECOGNITION OF TARGETS**

Snipers work in pairs and they must be able to give such clear indication of targets to each other that the one to whom the target is being described can have no shadow of doubt as to its whereabouts.

This subject must be thoroughly mastered and will almost certainly require re-teaching.

Pamphlet No. 2, Lesson 2 contains full details of the lesson.

## **LESSON 27.—LECTURE ON OBSERVATION**

After the lecture, the film Visual Training, Parts 2 and 3 should be shown.

### **Observation**

1. The purpose of observation is to penetrate the enemy's concealment and in order to do this a highly developed sense of sight is essential to the sniper. Not only because is it on this that he depends to find his quarry

but it will also afford him protection against his enemy. Often the sniper will be called on to help in the task of collecting intelligence and it is necessary that he should excel in this, an integral part of his training, in order to be of full use in this role. He must of course also be expert in the use of the various optical instruments at his disposal.

Observation is the first step towards offensive sniping and in this, as in the subject of fieldcraft, it is necessary to re-develop the natural senses which have become dulled by security and civilization. The shikaris of India, the trappers of Canada, the big game hunters of Africa, deer stalkers and poachers and all who have to pit their wits against those of wild animals, have retained the quick and perceptive eyesight that becomes of paramount importance in war. The townsman who seldom, if ever, has to use his eyes over long distances to locate small objects, can only develop the necessary keenness of vision by much training and practice.

#### **Training of the eye**

2. Proficiency as an observer comes rather more from a mental attitude than from physical endowment, but both of these qualities must be considered.

With regard to the physical aspect, no two men have the same degree of efficiency in their eyesight, but this can be developed to an adequate degree by exercising the muscles of the eye; this is done by practice in observing over distances out of doors under circumstances that war will demand.

#### **Mental alertness**

3. In the mental aspect, the observer or sniper can learn from the hunter by emulating his alertness and patience, his attention to the smallest detail and powers of deduction which must be of the highest order if he is to come within striking distance of his quarry.

The hunter learns to notice scores of little things such as the bending of a blade of grass, the unnatural shape of a shadow, the disturbance of the undergrowth, or a wisp of vapour in cold weather from which he can deduce reasons which would escape the untrained eye of the casual observer.

It is from such signs that a good and well-trained observer will often learn most about the enemy. When fighting some enemies, the actual movement of individuals will rarely be seen. On these occasions, more than ever, the sniper will have to take notice of the smallest things such as a window now open which was before known to be closed, a chicken suddenly darting from behind a farm building, sheep, goats and other domestic animals disturbed in a field, a puff of smoke, signs of fresh spoil from some kind of earth work or even a cigarette or other carton carelessly thrown down; each item carries its own signification and has a story to tell.

The action of birds and animals, differing according to whether they be wild or domestic, often give a clue to the whereabouts of man; a good

woodsman can tell from the different chatter or behaviour of birds whether it was occasioned by man, dog, cat, stoat or winged vermin.

The observer must so carefully study his ground that he becomes familiar with its every feature. Should any feature show a change for no apparent reason, his suspicions should be at once aroused and he will not rest content till he has determined the reason for such a change which may well prove to be a carefully concealed and cunningly camouflaged enemy post.

It will be seen that mental alertness and the ability to notice such details as these, with the added faculty of drawing conclusions from them, is of vital importance to the trained sniper.

To these other qualities must be added that of patience and thoroughness. Any object of suspicion, not immediately obvious, must be thrashed out and dissected in the mind from every possible angle till a reasonable solution presents itself.

### **Light**

4. Owing to the position of the sun and clouds the light is constantly changing and the sniper must never loose sight of this fact. Almost from minute to minute the visibility of objects will change with the light; for this reason the sniper must observe all the time as a sudden change in light may divulge some feature not previously noticed. The sniper should also be able to discern when the light is likely to be in his favour and when against him. When the sun is behind him he will have the greater advantage, when it is low and in his face observation will be especially difficult and even more fatiguing than usual; there is the added danger here that the sun flashing on the object glass of his telescope may disclose his own position.

The clearest light comes just before or just after a shower of rain and the sniper must be quick to realize this fact and take full advantage of it.

## **LESSON 28.—OBSERVATION EXERCISE USING BINOCULARS**

### **A INSTRUCTOR'S NOTES**

#### **Aim**

1. To practise the sniper in the use of binoculars.

#### **Stores**

2. Binoculars, notebooks, pencils, panorama drawings of the area in use, articles of equipment such as steel helmets, shovels, rifles, boots, picks, etc.

#### **Instructional knowledge**

3. The articles of equipment should be placed out, partially concealed, at distances up to 200 yards: it is necessary to view each article from the observer's position, using binoculars, to make sure that sufficient but not too much of the article is visible.

4. The scheme must be laid out immediately before it is due to take place or changes in light may render some of the objects altogether invisible and others too easy to see.

5. The men should work in pairs, one observing and the other keeping the log; they should then change their duties.

6. It is a good idea for the instructor to give marks for the results on the panorama drawings.

7. The panorama drawings will have to be considered well in advance of the teaching of this lesson: they cannot be produced in numbers at the last moment: it will usually be found that a number of men in the unit can undertake this work but if not, the nearest RE unit should be asked to help.

## B CONDUCT OF LESSON

### Preliminaries

8. The squad should be placed in a position from which all the objects can be seen and the panorama drawings issued.

### Revision

9. Question the men on "Why things are seen" and on how to scan ground.

### Approach

10. It will very rarely be possible for the sniper to see the whole of an object but by careful analysis he should be able to deduce what an object is: many a position has been given away by a twig leaning at an unnatural angle, likewise an empty cartridge case gleaming in the sun, has proved the undoing of an otherwise carefully concealed enemy. Explain that for these reasons only parts of objects will be visible.

### Observation

11. Explain the limits of the area to be searched and tell the squad to plot objects that they discover, on their panorama drawings, writing the name of what they consider the object to be beside it and giving it an approximate range. Practise the squad in searching the ground for five minutes without the use of binoculars.

12. The squad is then given approximately 30 minutes in which to search the ground using binoculars, at the end of which time the drawings are collected.

13. The assistants who helped to put out the objects should then go round and point out each in turn while the instructor discusses with the squad what the object is and why it was easy or specially difficult to see.

### Conclusion

14. Questions to and from the squad.

15. Sum up.

## LESSON 29.—THE THEORY OF A GROUP

To be able to shoot intelligently the sniper must thoroughly understand the " Theory of a Group " and all its implications.

Details of the lesson are contained in Pamphlet No. 3, Lesson 33 and special attention must be paid to paragraph 6.

It is quite possible that this lesson was not fully understood in the recruit's early training so no harm will be done by teaching it again now.

## LESSON 30.—MAKING OUT A SCORE CARD

### A INSTRUCTOR'S NOTES

#### **Aim**

1. To teach how to make out a score card.

#### **Stores**

2. A few score cards (AF B 2141) per man, a large blackboard, chalk and pencils.

#### **Instructional knowledge**

3. A large diagram of a score card should be previously drawn on the blackboard.

4. It must be borne in mind that this lesson is to show how to make out a score card and the instructor must not be side-tracked into lengthy discussions on sighting shots and the desirability of certain alterations.

5. An example of an imaginary shoot at 300 yards without any complicated changes in wind or elevation may be used as a basis for this lesson.

## B CONDUCT OF LESSON

#### **Preliminaries**

6. The squad should be comfortably seated where the blackboard can best be seen.

#### **Revision**

7. Question the squad on the Theory of a Group

#### **Approach**

8. Explain that in order to obtain best results and eventually improve upon them, each man must constantly apply his knowledge of shooting to every practice he does and in particular make full use of score cards; much information can be gained by studying, before a shoot, a score card of a previous shoot of a similar nature especially if it can be discussed with someone who is in a position to offer advice. To do this an accurate record

of what actually transpired throughout the *whole* of a shoot must be available and in this respect a well made out score card can be an invaluable aid. It has the added advantage that it is the only way in which a firer can study, during an application practice, the position of his MPI and the way in which his group is forming.

### Making out a score card

9. *Entries before getting into position.*—Explain that time can be saved by filling in such items as the date, range, ammunition used, practice fired, and details of the position used, *eg*, sling, Hawkins, cover, etc before firing.

10. Practise the squad in filling in the headings.

11. *Entries when in position* (other than shots):—

(a) *Wind* can be recorded in several different ways but whichever method is used it should be simple and easily understood; the example shows an *arrow* to give *direction* and the word *fresh* denoting *strength*.

(b) *Light* is usually described as *dull*, *bright* or *very bright* but here again any term which is easily understood may be used. Get the squad to enter these on their score cards.

(c) *Elevation.*—Since the elevation drum is graduated in minute of angle clicks, if any change in the reading of the drum is made, the figure entered in the elevation column should be minutes above or below the normal reading, *eg*, if the range to the target is 300 yards and it is decided to begin shooting with the sights at 350 this should be entered as plus 2 rather than 350; if, later, another minute is required, this would be entered as plus 3.

Question the squad.

(d) *Deflection.*—Under the space for each shot will be found a sub-division for wind; the left side is for any *left* deflection and the right side for any *right* deflection used. If 3 minutes left were decided on for the first shot the entry would read as follows:—

	A	B	I
Elevation	+ 3		
Wind	3		
Score			

### Plotting the position of shots

12. Explain that as each shot is signalled, its value should be marked in the space provided, then when the position of the shot on the target is

Army Form B 2141

Name .....

Range ..... 300° ..... Wind. 3 greater .....

Amm Used... CP44 ..... Light Dull .....

Practice .... Off ..... Date ... 8/3/50 .....

Remarks Wind strengthened after 3<sup>rd</sup> shot.. 7<sup>th</sup> shot....  
foully bat off.. light changed after 8<sup>th</sup> shot.

	A	B	1	2	3	4	5	6	7	8	9	10
Elevation	+2	+6	+6									+7
Wind	3	5			7							6
Score	3	3	5	4	5	5	5	5	4	4	5	5
	TOTAL											47

Fig 47.—A specimen score card filled in.

shown the shot should be accurately plotted on the card and a number coinciding with the order of arrival of the shot placed beside the mark. If this would tend to a muddle, owing to shots being close together, the number may be put at the side and a line drawn to a dot showing the position of the shot on the actual card. If at any time a bad shot is realized it should be marked in such a way that it may be easily recognized; a ring round the number is a good way of doing this.

13. Give the squad practice in making out a complete card, the instructor providing all the details of imaginary light and wind, etc and the value and position of shots as they arrive (*see Fig 47*).

### **Conclusion**

14. Questions to and from the squad.

15. Sum up.

## **LESSON 31.—INDICATION OF TARGETS**

### **A INSTRUCTOR'S NOTES**

#### **Aim**

1. To teach the necessary modifications to the normal methods.
2. To teach the importance of co-operation with the observer.

#### **Stores**

3. Rifles and telescopic sights, aiming rests on the scale of one for every two men, binoculars, telescopes, figure targets.

#### **Instructional knowledge**

4. Practice in indication and recognition of targets must be given as frequently as possible; field firing exercises, observation schemes, etc, lend themselves particularly to this important side of the sniper's training in which the highest possible standard is essential.

5. Experience in the past has shown that the movement of the deflection drum to allow for wind is so often overlooked that it is now included in the sequence of indication for the sniper.

6. Small figure targets, visible through the telescope but not the telescopic sight should be used for practice of paragraph 18. They must be sited before beginning the lesson, consideration being given to expected changes in light conditions, etc.

7. Details of the use of degrees will be found in Section 10 Chapter 2 of Pamphlet No. 12—Control and Theory of Fire.

## B CONDUCT OF THE LESSON

### Preliminaries

8. Normal safety precautions. Fit the telescopic sights and give out arc of fire.

### Revision

9. Indication of targets (Pamphlet No. 2 Lesson 2).

### Approach

10. Explain that the principles of indicating targets to snipers are similar to those already taught but there are slight differences in points of detail to cater for such factors as having a deflection drum on the sight, the desirability of the fullest measure of co-operation between the sniper and the observer and because only one rifle, firing at the most, a few rounds, is all that need be considered. Extreme accuracy and detailed description are therefore essential as there must be no shadow of doubt about the firer being able to recognize the target.

11. When it is known that the enemy are operating in an area every effort must be made to select the most important targets such as commanders radio operators etc.

### Considerations when indicating

12. Explain that the following factors are the basis of indication:—

*Range*.—This may be given in units of 25 yards for greater accuracy eg, "325."

*Wind*.—The wind allowance table is used, eg, "Drum 2 mins left," in which case the drum is rotated anti-clockwise.

*Indication*.—This may often have to be more detailed than normal but should be as brief as is consistent with extreme accuracy to avoid misunderstanding and loss of time.

*Confirmation*.—The sniper, before he fires, must satisfy himself that the observer is ready to observe the strike of the shot so that fire effect can be accurately assessed.

13. Give an example such as:—

*Observer*      "200

*Drum 4 minutes right*

*Large stone—right bottom corner—enemy's head.*"

*Sniper*      "Got it."

*Observer*      "OK, Fire when ready."

14. Practise the squad acting in pairs as sniper and observer.

### Use of degrees

15. Explain that occasions will arise when it is necessary to supplement the clock ray and other methods by measuring along the ray using degrees. Since degree markings are found on the lenses of binoculars this can be done very accurately. The left hand with the arm fully extended provides a rougher measurement and should be explained here to the men if they have not already been taught it.

16. Give an example such as:—

“ 200

*Drum central*

*Gate—right 2 o'clock 3 degrees — head and shoulders visible.”*

The sniper and observer then answer each other as before.

17. Practise the squad using degrees.

18. *Instruments of differing magnification.*—Explain that when difficulty is experienced because the sniper and observer are using instruments of different magnification (Telescope  $\times 20$ , binoculars  $\times 8$ ) and when consideration of concealment and time permit, the observer should allow the sniper to view the ground through the telescope, or if he has indicated the target by degrees, the binoculars. If this is not practicable the observer should indicate some feature of ground to be used as the sniper's aiming mark.

19. Give an example such as:—

“ 275

*Drum 3 minutes left*

*One foot from right end of wall, a small round mark.  
That is a loophole. Aim at the right edge of it.”*

The sniper and the observer then answer each other as before.

20. Practise the squad using the targets previously positioned.

### Conclusion

21. Questions from and to the squad.

22. Final practice of weak points.

23. Sum up.

## LESSON 32.—SHOOTING 3.—GROUPING USING IRON SIGHTS OVER COVER AT 100, 200 AND 300 YARDS

Having been taught the Theory of a Group its practical application should be carried out at an early stage in order to prove the theory.

### LESSON 33.—JUDGING DISTANCE 4.—PROBLEMS

The sniper must have continual practice in judging distances to become efficient and at this stage of his training it is advisable to set him some problems.

From one place select approximately 12 objects of varying types, at varying ranges and over varying types of ground. This should enforce the usage of all the methods of estimating ranges that the sniper has been taught.

The correct distances must previously have been obtained by a range finder and all judging must be done with the men lying on the ground.

After this test the instructor should discuss the possible reasons for any inaccuracies.

### LESSON 34.—MAP READING—GRID SYSTEM, BEARINGS AND SETTING THE MAP

Snipers must be able to indicate to others the exact position of anything of importance by means of co-ordinates and must be able to locate positions indicated to them by the same means; closely allied to these necessities are setting the map and a thorough knowledge of work with the compass. This aspect of "map reading" is covered in "Notes on Map Reading, 1929."

### LESSON 35.—THE No. 32 TELESCOPIC SIGHT CHART

*To be taught only to instructors and shown to the men if time allows.*

#### A INSTRUCTOR'S NOTES

##### Aim

1. To test the correct functioning of the elevation and deflection drums.
2. To detect faults and wear in the holder or bracket and pads.

##### Stores

3. A telescopic sight chart, a rifle rest or vice, a disc of paper or metal to act as a "stop down," a plumb line.

##### Instructional knowledge

4. In the event of faults being detected the unit armourer will sentence the equipment beyond local repair (BLR).
5. Unit armourers can obtain the telescopic sight chart from the RAOC under G 1098, Scale 4261.

6. *The rifle* with the telescopic sight attached should be firmly fixed in a vice or rifle rest, the muzzle pointing towards the chart fixed on some vertical surface. The base of the vice or rest must be on a firm foundation, wooden floors being avoided owing to the vibrations set up, the movement of the tester being quite sufficient to prevent him obtaining accurate results. Sandbags can be used in the event of the rifle rest not being rigid enough.

7. *The telescopic sight* must be attached as described in Lesson 5. The object glass will be "stopped down" by fitting, in the front of the telescopic sight, a circular disc of card or tin which has a hole bored in its centre of not more than  $\frac{1}{8}$  or less than  $\frac{1}{16}$  inches diameter. "stopping down" the object glass eliminates parallax which would otherwise be very troublesome at this short range.

8. *The chart* must be:—

- (a) Fixed exactly 28 feet from the object lens of the sight.
- (b) In a good light.
- (c) Put up square and tested with a plumb line in relation to the vertical line on the chart.
- (d) Adjusted so that its centre is approximately the same height as the sight.

## B CONDUCT OF THE LESSON

### Preliminaries

9. Normal safety precautions.

10. The rifle with the telescopic sight attached should be set up 28 feet from the chart and the chart checked for squareness by plumb line.

### Approach

11. Explain that whenever there is any reason to doubt the accuracy of the sight it must be tested on the telescopic sight chart; if the sight fails to pass this test it will have to be sent away for repairs.

### Checking the range drum

12. Explain and show, where possible letting the squad work the range drum themselves, that the range drum is set at zero and the tip of the pointer is aligned on the top of the vertical scale (Marked 0). The range drum is then turned down through the scale of ranges and a check made at each 100 yards with the equivalent line on the chart. Then without any adjustment to the pointer a re-check is made working the drum back to zero again.

13. The range drum is again rotated through its full range, particular notice being taken that the pointer does not deviate from a straight vertical line.

14. Practise the squad as far as possible and ask them questions.

### **Checking the deflection drum**

15. Explain and demonstrate, letting the men work the drum themselves (where practicable), that the deflection drum is set at the zero mark and the top of the pointer aligned on the centre line of the deflection scale; the drum is turned to the left and a check made at each two minutes of angle with the equivalent dot or line on the card, then without adjusting the pointer a re-check is made by working backwards. The process is now repeated to the right.

16. The deflection drum is next rotated through its full range of 32 minutes, particular notice being taken that the pointer does not deviate from a straight horizontal line.

17. Practise the squad as far as possible and ask them questions.

### **Detecting faults in the holder and pads**

18. Demonstrate the following phases of this test:—

- (a) With the range and deflection drums set at zero the top of the pointer is carefully aligned on the small diagram at the top right corner of the chart.
- (b) The telescopic sight is removed from the rifle and replaced by holding it at the front end and the clamping screws tightened up with the final tightening to the *rear* screw. Provided that the rifle has not been moved in its rest the pointer should be still on the mark.
- (c) The sight is again removed from the rifle and this time replaced holding the sight at the rear end, the *front* clamp being given the final tightening. The pointer should still be aligned on the centre of the mark.

19. Any variation in the alignment of the pointer noticed after the two above tests have been carried out denotes badly fitting or worn holders and/or pads.

20. These tests will not reveal faults in the telescopic sight caused by the shock of recoil during firing.

21. Question the squad and let them carry out the tests with their own equipment as far as time allows.

### **Sentencing an equipment BLR**

22. Explain that an equipment should be sentenced BLR if in:—

*Para 12* there is a variation exceeding 50 yards at any range between the pointer and the equivalent line on the chart.

*Para 13* the pointer moves more than one minute right or left of the vertical line.

*Para 15* there is a variation exceeding one minute either way.

*Para 16* the pointer moves more than one minute up or down from a horizontal path.

*Para 18* when the sight is replaced on the rifle, the pointer is more than one minute from its former position; the limit of one minute in each direction is marked on the diagram.

### Conclusion

23. Questions to and from the squad.
24. Sum up.

## LESSON 36.—SHOOTING 4.—PRACTICAL RANGE ZEROING TELESCOPIC SIGHTS

### LESSON 37.—CAMOUFLAGING SNIPER EQUIPMENT A INSTRUCTOR'S NOTES

#### Aim

1. To show the sniper how to camouflage his equipment so that he can thereby defeat his opponent's observation.
2. To practise the sniper in camouflaging his equipment.

#### Stores

3. Denison smocks, helmet nets, face veils, scrim of various colours, a knife, a sack, needles and string, one complete set of equipment already camouflaged.

#### Instructional knowledge

4. A good way of bringing out the points in this lesson is to have a sniper standing against a bush or hedgerow with a complete set of uncamouflaged sniper equipment. The squad should be seated about 25 yards away. As each article is dealt with in the lesson the man should remove his uncamouflaged kit and put on the camouflaged articles; he should then, bit by bit, blend in to his background. (*See Fig 48*).

Two 40-minute periods are required.

### B CONDUCT OF LESSON

#### Preliminaries

5. Normal safety precautions.
6. The squad should be placed in a position from which the demonstration can be seen.

#### Revision

7. Question the squad on personal concealment.



**Fig 48.—Uncamouflaged and camouflaged snipers.**

### **Approach**

8. Concealment is further aided by the use of camouflage. Many animals are provided by nature with effective camouflage, but the soldier has to make his own. The aim of personal camouflage is to hide the familiar shape of the man and the shine from his clothing, skin and equipment while matching him as far as possible with his surroundings. The interest of concealment and camouflage conflict, however, with those of mobility and the handling of weapons so that some degree of compromise is always necessary.

Shine can only be prevented by making surfaces rough and shape is distorted by loose fitting garments both of which may well be a hindrance if carried too far.

Unless some special colour scheme is used to match some particular background, and this is seldom possible, this also calls for compromise; for general use a combination of neutral colours, the greys, greens and browns are best. But some contrast both of colour and tone may with advantage be introduced to obtain a disruptive effect, small amounts of highly conflicting colours such as yellow and black will be a help if used sparingly. Special smocks may be issued for unusual theatres such as for arctic and jungle conditions.

**Camouflaging the person and equipment**

9. Explain that the only practical measures that the sniper can take towards personal camouflage are as follows:—

10. *The head.*—A garnished helmet net or cap comforter is worn on the head. The face is darkened with camouflage cream and further concealed where necessary with a face veil which should also be garnished; the garnishing may be done with pieces of scrim or local herbage. (*See Fig 49.*)



**Fig 49.—How to treat the head, face, body and hands.**

11. *The hands* are darkened with camouflage cream or dark gloves may be used. (See Fig 49).

12. *The body*.—The denison smock as issued to snipers will normally be worn, but as it is will not give sufficient protection from view, it should be further improved by stitching a few tufts of hessian garnish on the prominent parts to break up its shape and surface. (See Fig 49).

13. *The rifle* should be camouflaged by wrapping it in scrim with smaller bits attached, treating the telescopic sight in like manner; special care must be taken that none of the material gets in the way of a clear view through the sight. Point out that it must not be tied up too permanently as it will all have to be removed for purposes of cleaning the rifle and sight. Mention the dangers of leaving a rifle so treated with camouflage materials on it after wet conditions. (See Fig 50).

14. *The telescope and its case*.—The telescope case should be covered with hessian and tied on. The telescope and ray shade should be covered, when in use, with a spare face veil, old sock with the foot cut off or hessian; whichever is used on the telescope itself it will have to be removed each time the telescope is returned to its case and it should therefore only be put on loosely. (See Fig 50).

15. *Binoculars*.—A strip of hessian can be tied round the front of the bracket and also round the body of the lenses. Care must be taken that the camouflaging material does not interfere with a clear vision or with the focussing gear. (See Fig 50).

16. Practise the squad in camouflaging their own kit.

### **Conclusion**

17. Questions to and from the squad.

18. Final summing up of the lesson.

## **LESSON 38.—PERSONAL CONCEALMENT**

### **A INSTRUCTOR'S NOTES**

#### **Aim**

1. To show the sniper how he can make use of cover and background so that he can observe without himself being seen.

#### **Stores**

2. Denison smocks, face veils, camouflage cream.

#### **Demonstration men**

3. A number will be required.

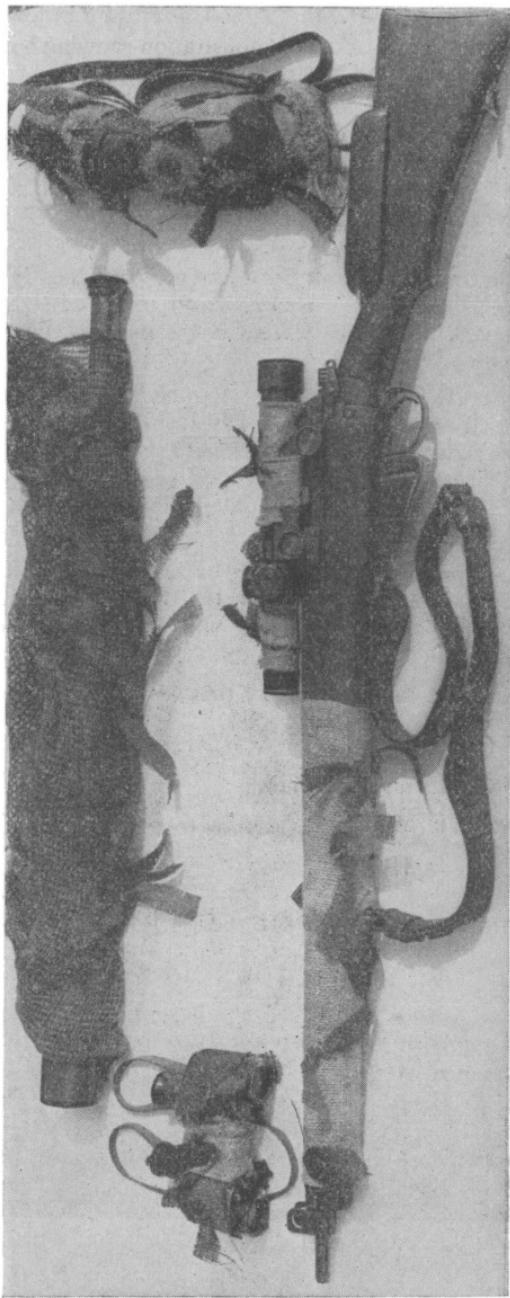


Fig 50.—How to treat the rifle, sight, binoculars, telescope and its case.

### Instructional knowledge

4. This lesson takes the form of a demonstration showing how not to use cover and background followed by a demonstration of the right way to do it. A rehearsal of the complete demonstration must take place immediately before the lesson.

5. The main points to be brought out in the lesson are to show:—

(a) The use of shadow. (*See Fig 51*).



Fig 51.—The use of shadow.

- (b) The use of background. (*See Fig 52*).
- (c) The avoidance of sky lines and other straight lines. (*See Figs 53 and 54*).
- (d) The avoidance of isolated or other conspicuous cover. (*See Fig 55*).
- (e) How outstandingly obvious are the face and hands unless treated with camouflage materials. (*See Fig 56*).
- (f) Avoid looking over cover; look round or through it. (*See Fig 57*).



Fig 52.—The use of background.



Fig 53.—The avoidance of sky lines.



**Fig 54.—The avoidance of straight lines.**

6. In the demonstration of incorrect positions camouflage should not be used.

In the demonstration of positions correctly carried out, camouflage should be used.

## B CONDUCT OF THE LESSON

### Preliminaries

7. The squad should be seated from where all the demonstrators can be seen.

### Revision

8. Why things are seen.

### Introduction

9. Fieldcraft is the use of natural cover when stationary or on the move: it is part of the hunter's art and consists of the use of cover and, during movement, the addition of silence and the knowledge of his prey and skill

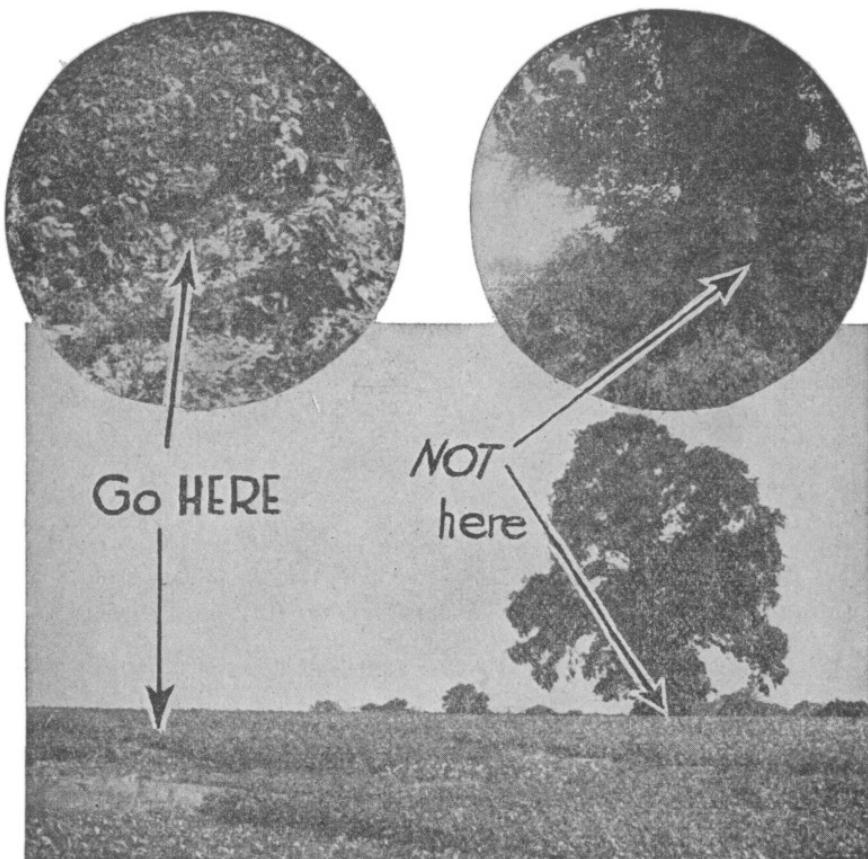


Fig 55.—The avoidance of isolated or other conspicuous cover.

at arms which together enable the hunter to make his kill. Fieldcraft in all its forms demands physical fitness, mental alertness, patience and self-discipline; it also calls for the ability to read and use ground.

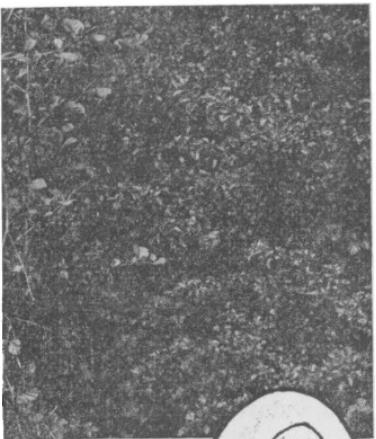
These attributes when developed and applied with initiative make a man a formidable fighting opponent. The sniper must therefore develop the same cunning that the hunter uses to outwit his quarry and since his quarry is another man, must know how to outwit him when he tries to retaliate.



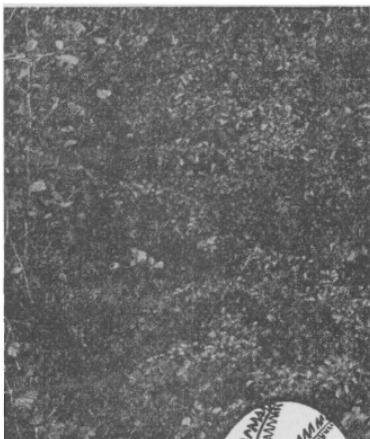
*Wrong !  
The face  
and hands  
will shine*



*Blacken  
them*



*Or use  
a face  
veil*



*Or hold a  
spray of leaves  
in front of  
the face*



**Fig 56.—Hiding the face and hands.**

Knowledge must be acquired not only of the concealment offered by vegetation and other features covering the earth's surface: every fold in the ground may afford cover and to be able to recognize such folds and use them requires much practice. The dangers and protection afforded by light and shadow must also be studied. In movement both agility and stealth must be practised.

When stationary the problem of concealment calls for a knowledge of how best to use the natural cover the ground affords and of the assistance given by camouflage.

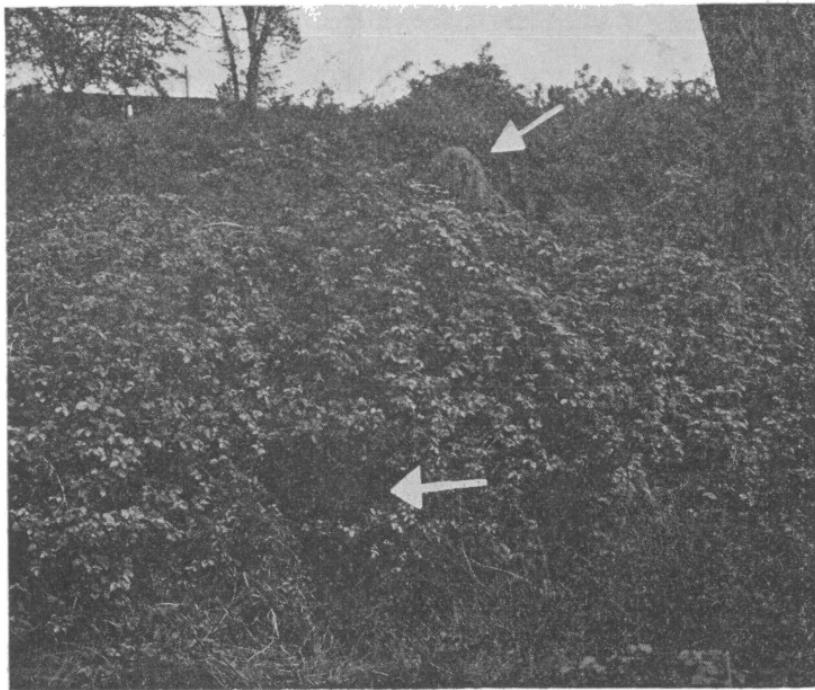


Fig 57.—The avoidance of looking over cover.

#### The demonstration

10. Explain the area of ground to the squad.
11. The squad search the area for the men in bad positions and without their camouflage; point out why each is seen and ask the squad to suggest where each could have moved for concealment.
12. The squad is faced about while the demonstrators take up their good positions using camouflage.

13. The squad face their front again and search the area.
14. After a reasonable time for searching, make each demonstrator in turn move to one side or stand up so that he is exposed and then make him move back again to his concealed position; bring out why each man obtained good concealment when he moved from the one position to the other.

#### **Conclusion**

15. Questions to and from the squad.
16. Sum up.

### **LESSON 39.—TIPS ON MARKSMANSHIP 1**

#### **A INSTRUCTOR'S NOTES**

##### **Aim**

1. To give the sniper some guidance on the finer points of shooting and the value of sighting shots.

##### **Stores**

2. 4-foot range targets, blackboard, compass and chalk.

##### **Instructional knowledge**

3. Students should be questioned on the Theory of a Group; unless they have fully grasped its significance it is of no use proceeding any further with this period.

#### **B CONDUCT OF LESSON**

4. The range practices as fired by the sniper are simply an advanced stage of his elementary training. The aim of such practices is to give him confidence in his rifle and in his ability to use it; if he can gain that confidence on the range, he can go into the field well knowing that he is capable of dealing with any target that he is likely to come up against.

5. Such confidence comes only from getting good results on the range and this can only be achieved by having a good understanding of the basic principles of shooting. The sniper must have absolute conviction that grouping is the foundation of all shooting and that only by good grouping will good results be obtained; when he has mastered grouping the next step is to apply the group to the target. This requires a lot of extra knowledge and the more experienced the firer gets the easier it becomes.

6. The sniper must:—

- (a) Know what he is capable of doing at any particular range (*i.e.*, his grouping capacity).
- (b) Know what to do if he is outside his grouping capacity.
- (c) Thoroughly understand the value of sighting shots.

### The value of sighters

7. The importance of *sighting shots* on the range cannot be too strongly emphasized. The skilled shot should be able to find out from his sighters almost everything that he wants to know before he begins the practice proper; it is important, therefore, that the beginner gets to know, as soon as possible, all there is to learn about the value of sighters. It is only after some experience that the sniper will gain the full benefit of these shots, but some points are given below which should help him in the first instance:—

- (a) Sighters must be the most careful and deliberate shots it is possible to take; a badly fired sighter will almost certainly create a false impression which will last throughout a shoot and spoil it. If, for instance, both sighters are to one side of the target and were caused by the actual "let off" of the shot being bad, the firer may make allowances for these shots and all his other shots tend to go to the other side of the target.
- (b) Sighters should also be most carefully thought out from the point of view of elevation and wind and there is nearly always ample time to give these conditions deliberation before the shoot begins this should make the first shot strike somewhere near the bull and act as confirmation of the estimations carried out. If this first shot has gone near the centre of the target no alteration will be advisable between the first and the second sighter thus allowing the first two shots to be considered in conjunction.
- (c) If the first sighter was an outer and was known to be a good "let off" there is the possibility that the next shot may be a miss so it is advisable to make some slight alteration to the sights. Should the position of the second sighter have been moved nearer the centre of the target in proportion to the amount the sights were altered a further alteration can usually safely then be made. The beginner will probably have difficulty in finding the true mean point of impact (MPI) of two shots only and this is where careful coaching in the early stages will be invaluable.
- (d) The comparative value of two sighters close together and two sighters some distance apart may be considered (in the case of two sighters some distance apart they must both have been "let off" well and be within the man's grouping capacity). The MPI of the two sighters some distance apart should be somewhere between them and if this point is the centre of the target the rest of the group should be in that area. In the case of the two sighters close together it is very difficult to tell if they are the two high, low, left or right shots of a group about to form in the wrong place. A third sighter would probably determine the answer, but this is not normally permissible and calculations will have to be made on the sighters or on their combination with the first round of the counting shots.

8. Two pieces of information available will help to solve the problem. One, the knowledge of the man's grouping capacity and the other the knowledge of what a group is and means, *i.e.*, the theory; it can safely be said that the MPI will lie within an area enclosed by two arcs whose centre, taken as being the sighting shots, is described with a radius of half the grouping capacity; such arcs should be drawn opposite to each other. (*See Fig 58.*)

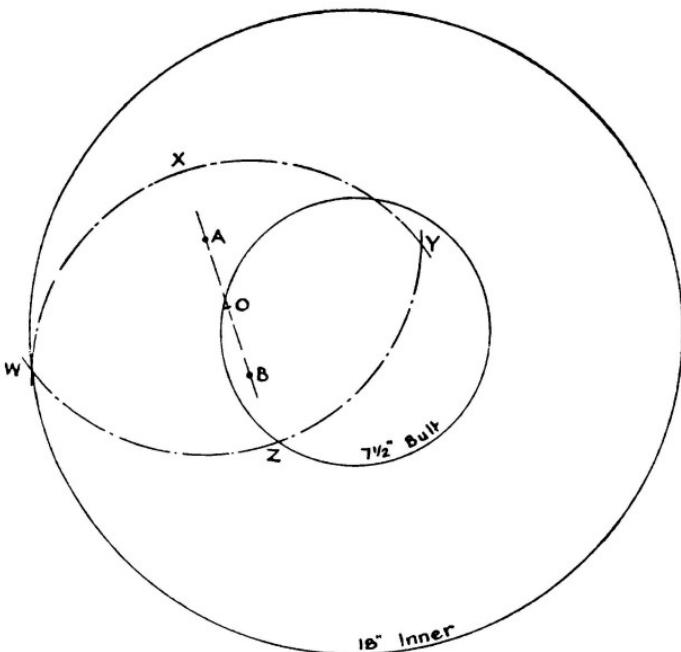
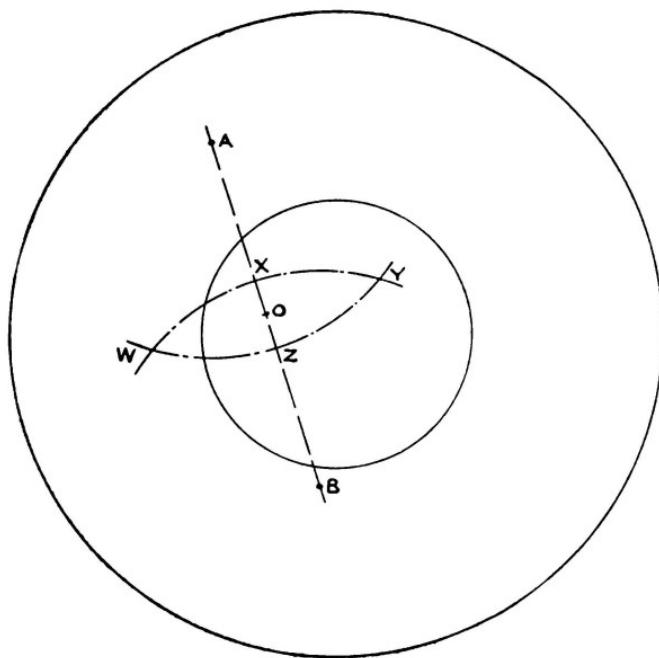


Fig 58.—Area within which the MPI may be expected when sighters are close together.

It will be seen that the closer the sighters are together the larger will be the area within which the MPI may be expected; conversely, the further apart the sighters are (always provided that they are within the man's grouping capacity) the more confined will be the area containing the MPI. (*See Figs 58 and 59.*)

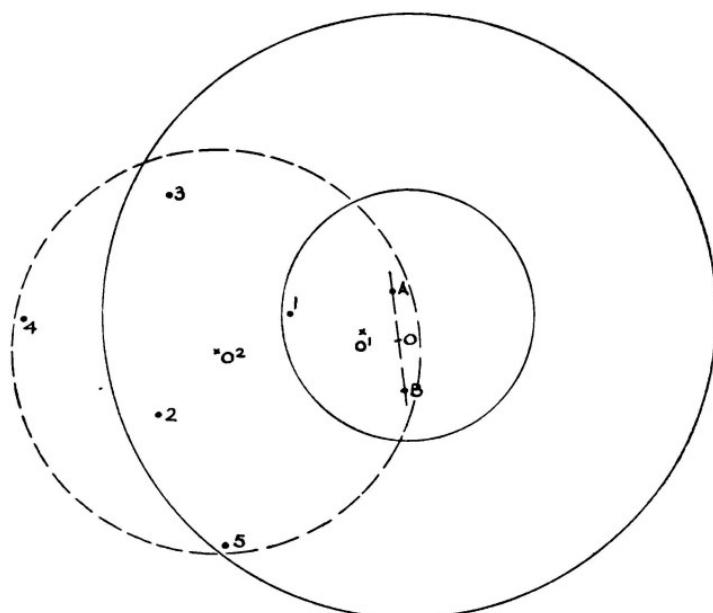
9. Example "A." In Fig 58 it is assumed that a 4-inch grouper is firing at 300 yards at which range his grouping capacity is 12 inches. His sighters "A" and "B" are 4 inches apart and his MPI might be expected to be at "O." This *may* be correct, but it *can* be anywhere within the broken line "W" "X" "Y" "Z" as only the next shots can prove.



**Fig 59.**—Area within which the MPI may be expected when sighters are far apart.

**10. Example "B."** (See Fig 59). The next assumption is that of a man with the same grouping capacity as the first also firing at 300 yards and this time the sighters are 10 inches apart at "A" and "B"; in this case the MPI might be expected to be contained in the far more limited area "W" "X" "Y" "Z".

**11. Example "C."** (See Fig 60). In this third example it is imagined that a 4-inch grouper is firing at 300 yards at which range his grouping capacity is 12 inches. He gets sighters 3 inches apart at "A" and "B" and his remaining shots arrived as shown plotted in the order of their arrival on the target. The firer made no alteration after his first shot to count, but he should have realized from this shot that his MPI was likely to be at  $O^1$  though in fact his sighters were well fired shots and that they were in fact the two right hand shots of a group forming left; from the remainder of the shoot it transpired that  $O^2$  was really his true MPI.



**Fig 60.—Result of a shoot to show how vital it is to study the first three shots in conjunction.**

12. From these three examples it will have become evident how experienced a firer must be in order to get the fullest value from his sighters. It is a paradox that the further apart sighters are the easier will it be to judge the probable MPI and that when they are close together and at the same time near to the centre of the target even greater care and more difficult calculations will almost certainly be necessary; in many cases the third shot must be the determining factor.

13. Give problems on the target and on the blackboard.

#### **LESSON 40.—SHOOTING 5.—APPLICATION AND SNAP AT 200 AND 300 YARDS WITH TELESCOPIC SIGHT**

#### **LESSON 41.—TIPS ON MARKSMANSHIP—2 A INSTRUCTOR'S NOTES**

##### **Aim**

1. To give some advanced information on shooting in different kinds of weather and light.
2. To give some hints on maintenance peculiar to the sniper rifle.
3. To give some information about "flattening the trajectory."

## Stores

4. A blackboard, chalk and diagrams as necessary.
5. Each student should have his sniper rifle and telescopic sight.

## B CONDUCT OF THE LESSON

### Other factors affecting shooting

6. In the first lecture on Tips on Marksmanship the importance of sighting shots and the careful study of the MPI in connection with the score cards or book was emphasized; there is, however, a number of other factors which may well upset otherwise carefully laid plans for obtaining a good score and these are discussed in this lecture.

7. *Wind.* There may be many flags on a range to show the direction and strength of the wind but the firer must be careful to watch the one which is likely to give the truest record of what effect the wind is really going to have on his bullet. The one nearest to the firing point is the best one to watch and the nearer it is to the ground the better. In a cross wind the flag should be watched for strength and in a head or rear wind for angle; this latter type of wind is always tricky and may blow slightly from one direction for one shot and another direction for the next. After rain the flags will not give a true picture of what the wind is doing as they will be heavy and the strength may easily be one or two minutes greater than would appear to be indicated.

8. *Mirage.* This is a phenomenon which can be seen quite clearly on a hot day through glasses or telescope and is an indication of which way the air is moving when there appears to be little or no wind. On very hot and sultry days it may even be seen with the naked eye; it takes the form of waves or ripples and when conditions are quite still it rises vertically and is then known as a *boil* and when moving across the front it is known as a *drift*; it is this last condition that the sniper must specially study. When a cross stream of air is affecting the mirage it appears like a clear stream of water rippling over a pebbly bed. The art of learning the strength of the wind from drifting mirage can only be acquired by experience.

9. There are degrees of *drift* in order of speed known as *Flowing*, *Running* and *Streaming*. These conditions may or may not be reflected in the behaviour of any flags or streamers available; it must also be remembered that the flight of the bullet may be some distance above the area affected by the mirage and on such occasions the flags will be the more reliable guide.

10. There may even be occasions when the mirage is at variance with the direction of the flags and it is then only by experience that the firer will get good results; other firers may be having the same difficulty and a quick look along the other targets on a range will often give the clue.

11. *Warm weather.* During hot weather there are many precautions to be taken by the firer who wishes to get really accurate results. The rifle must on no account be allowed to stand or lie in the sun as it will get very hot and cause inaccurate shooting, the shots being liable to go low. This is a well known fact in the barrels of Bren LMGs and normal rifles; in addition if the rifle lies on its side in bright sunlight, one side only will get really hot, the side next the ground remaining reasonably cool. This is likely to warp the woodwork on one side only and cause bearings on the barrel which were not originally intended thus giving generally erratic results; if it is quite impossible to find a shady place in which to place the rifle it is best to place it on the ground with the sights uppermost so that the whole of the rifle is equally affected by the heat.

12. Ammunition must not be allowed to become heated in the sun or inconsistent results will be obtained; a round should never be inserted in a hot chamber for any length of time before it is fired or it will "cook" and almost certainly be inaccurate.

13. *Clothing.* The tendency in warm weather is to want to shoot in shirt sleeves with the sleeves rolled up; this tendency must be checked. If it is allowed poor shooting will result as the shoulder, arms and elbows will soon get tired and sore. It is an almost infallible rule that extra clothing should on all occasions be worn when firing using a sling; a jersey pullover suitably padded makes an excellent shooting garment. The shoulder should be padded with a thin leather or rubber pad, the elbows should be re-inforced with padding covered with leather and the upper arm around which the sling would otherwise cause throbbing should be suitably thickened; the addition of a button to prevent the sling slipping into an undesirable position is also advocated.

14. *Rainy conditions.* If possible the action of the rifle and ammunition must be kept dry; if either is allowed to become wet shots will go very high. If conditions are so intolerably wet it is probably best to let everything get thoroughly wet and bring the sights down.

15. The reason for this is, that when a normal dry round is fired, the force of the explosion is taken on the face of the bolt and on the sides of the chamber; this force is approximately 18 tons a square inch. In the case of wet ammunition the predetermined pressures are upset and may build up to as much as 22 tons a square inch, adversely affecting the amount of jump for which the rifle was designed and causing high shots. The same effect will be observed with oily cartridge cases or chamber.

16. The sniper should keep the telescopic sight covers on when not actually shooting and make a rain shield of a piece of cardboard, etc to fit on to the front end of the telescopic sight if it is necessary to fire; a sniper should always carry some rag in order to be able to dry his breech, ammunition, etc.

17. *Mixed ammunition.* Although every care is taken in its manufacture to obtain standardized results, different batches vary to some extent in their performance; every effort should be made always to complete a shoot with one batch of ammunition, *i.e.*, same year, same maker, etc.

### Points about the sniper rifle

18. *The fore-end.*—If a rifle is shooting well, leave well alone; if it is not shooting well inspect the fitting of the fore-end. The barrel should have either free play up and down and sideways or have no downwards play, but upwards and sideways movement; the sideways play should be equal to both sides. Any signs of tightness in one of the directions in which there should be movement means that something has gone wrong with the “stocking up” of the rifle and it should go to the unit armourer for attention.

19. Let the squad check their own rifles under supervision.

20. *The forward telescopic sight pads.* The screws are punched to prevent their moving but they become loose sometimes, specially on models of British manufacture; they should be tested and tightened by the unit armourer if necessary.

21. Make the squad try theirs.

22. *The trigger.*—It is essential to have a “sweet” let off of the second pressure. Under bad conditions a man with a sensitive finger may find several pressures between the first and the final one; the final pressure should take a five pound weight, but only just.

23. Check all the trigger pressures in the squad for these points and send any rifles requiring adjustment to the armourer.

24. *Cheek rest.*—The position of this may be altered to suit the firer; if it is decided to move it forward, room must be left for the right hand. The cheek rest may also be altered in shape by careful filing, etc to suit individuals.

### Bad results—points to look for

25. If a man who is known to be a good shot starts missing the target there are a number of points which must be checked; show with the squad imitating what these are:—

- (a) Check that the sights are correctly set.
- (b) Check that the sight clamping screws are tight.
- (c) Check that the correct telescopic sight is on the rifle.
- (d) Check that the forward pad is tight.
- (e) Check that the screws holding the telescopic sight to the bracket are tight.
- (f) Check that the drums and range scales are tight.

(g) Shake the telescopic sight to see if any of the lenses are loose; the rear lens sometimes work loose owing to the spring holding it in position becoming less effective after a long time.

(h) In all cases an experienced shot other than the normal firer of the weapon should test it.

(j) A final test should be carried out on the telescopic sight chart.

### Flattening the trajectory

26. Though a sniper can adjust his sights to shoot to inches there may be occasions during movement on active service when he has to shoot really quickly and has no time for calculations or alterations of the sights. He should therefore normally carry his rifle with the sights set for a shoot at 300 yards so that if he aims at the centre of a man at any distance between 100 and 400 yards he stands a reasonable chance of getting a hit somewhere on the target. This strategy is known as "flattening the trajectory." (See Fig 61).

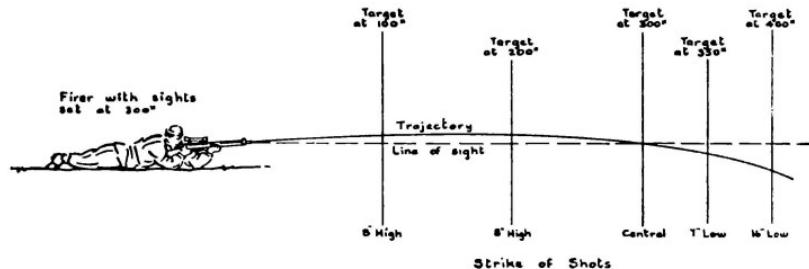


Fig 61.—"Flattening the trajectory."

## LESSON 42.—SHOOTING 6—APPLICATION, SLING AND HAWKINS AT 500 AND 600 YARDS

## LESSON 43.—CONCEALMENT EXERCISE A INSTRUCTOR'S NOTES

### Aim

1. To practise the sniper in the use of cover.

### Stores

2. Personal camouflage kit, camouflage cream, rifles, binoculars, boundary flags, blank cartridges.

### Instructional knowledge

3. An area of ground affording a variety of types of cover to a depth of 300 yards should be chosen.

4. The lesson is best carried out by double squads, the members of one squad observing while the others conceal themselves.

5. In every case the men concealing themselves must be able to see the observers.

## B CONDUCT OF THE LESSON

### Preliminaries

6. The flags to mark the limits of the area and that to mark the observer's position should be placed out.

7. Rifles should be inspected and the men warned of the dangers of blank cartridges.

8. Blank cartridges and camouflage cream should be issued.

### Revision

9. Questions the men on " Why things are seen."

### Approach

10. In order to defeat the enemy's observation the sniper must be able to take advantage of any type of cover and should be able to conceal himself in a matter of seconds and in close proximity to the enemy; this can only be achieved by constant practice in all types of cover.

### The exercise

11. Point out the area to all those about to take part in the exercise, giving them the limits as shown by flags. Make one squad face about, tell the other squad that they have five minutes in which to conceal themselves, and that on the first wave of the flag they are all to move slightly. On the second and subsequent waves of the flag they are to fire one round of blank. At the end of five minutes make the observers face their front and after a reasonable time for searching ask them individually how many of the other squad they can see. It is unlikely that all the observers will have discovered all those in hiding, so the instructor should give flag signals as necessary; if the men in hiding are still not all seen they should be signalled to fire some rounds of blank.

12. The instructor should then discuss with the observers why they were able to pick up some of those who had been concealing themselves and why others were not seen till they had moved or fired their blank cartridges.

13. Repeat the exercise for the other squad.

14. If there is still time, repeat the exercise for both squads giving the men only two minutes in which to conceal themselves.

### Conclusion

15. Final discussion on the exercise.

### **LESSON 44.—USE OF THE COMPASS**

The sniper must be expert in the use of the prismatic compass, as there may be many occasions on which he will have to use it; such purposes may well be finding his way in and out through his own lines at night and for determining his own position and the position of objects on his front it is his duty to report. Full details may be found in "Notes on Map Reading, 1929."

### **LESSON 45.—USE OF THE PROTRACTOR**

The protractor is an important article of the sniper's equipment; it is the essential link between map and compass. By its use, magnetic bearings, having been converted to grid bearings, can be plotted on the map and used for a variety of purposes. This aspect of training in map reading is found in "Notes on Map Reading, 1929."

### **LESSON 46.—OBSERVATION EXERCISE—TELESCOPE 1**

To become efficient at observing with the telescope, much practice is required; this should here be given as an exercise laid out on similar lines to that detailed in Lesson 28 "Observation Exercise—using binoculars." The chief differences between the two lessons are that in this one the articles to be discovered should be laid out at distances up to 300 yards and must be invisible when using binoculars only.

### **LESSON 47.—ELEMENTARY OBSTACLE CROSSING**

The sniper is a valuable man in battle and he must not get observed and shot at while crossing obstacles; he must therefore be an expert at this, as well as in all other aspects of fieldcraft. Though previously taught, the subject should be covered again and details of the lesson are given in Pamphlet No. 2, Lesson 16.

### **LESSON 48.—SHOOTING 7—CHECK ZERO OF TELESCOPIC SIGHT BY GROUP AT 100 YARDS. MOVING TARGETS AT 100, 200 and 300 YARDS**

### **LESSON 49.—OBSERVATION EXERCISE—TELESCOPE 2**

This lesson should be conducted in a manner similar to that for Lessons 28 and 46 except that demonstration men should be searched for instead of objects. The demonstration men should be concealed in firing positions up to a distance of 500 yards from the observers, but in this case they should not make use of nets, cream, etc, this will come in later practice. Signals should be arranged between the conducting officer and the demonstration men for their movement or the firing of blank cartridges in the event of the observers not finding them.

## LESSON 50.—LOCATING THE ENEMY

### Aim

1. To accustom snipers to the sound of shots coming towards them.
2. To teach snipers how to locate the enemy by his fire.
3. To teach snipers how to judge distance by crack and thump.

### Stores

4. Rifles, light machine guns with tripods, demonstration men, camouflage kit, .303-inch ammunition, binoculars, flags, telescopes, magazines and cleaning kit.

### Instructional knowledge

5. To ensure success the demonstration must be carefully rehearsed immediately before the lesson takes place in case of a change of light. It is best carried out on a range where the observers can be seated on a stop butt in a position where they can see over a long range and wide area.
6. Demonstrators should be placed out at varying ranges and over as wide a front as safety regulations will allow; one should be about 100 yards away, and others at distances up to about 800 yards.
7. The demonstrators should be reliable shots. LMGs, if used, must be mounted on tripods. Rifles should be fired well to a flank of the spectators with sufficient extra elevation to make sure there can be no possibility of accidents. Section 16 of Pamphlet No. 31, should be carefully studied and complied with.

## B CONDUCT OF THE LESSON

### Preliminaries

8. The squad should be seated and the demonstrators should be in position.

### Approach

9. Explain that the normal methods of locating targets were fully brought out in "Why things are seen." But there are other ways and these must be known by the sniper; one of these is finding the enemy's position by what is known as "crack and thump."

### Crack and thump

10. Explain that when a bullet, having a velocity greater than that of the speed of sound, is fired it will make a loud noise in forcing its way through the air; this noise, which gives a sharp *crack* to the ears, is quite separate from the report made by the weapon which fires it; this has the sound of a *thump*. If a bullet is fired from a modern rifle or machine gun towards an observer, the first noise that will be heard is the sharp crack of the bullet passing close to him, and some time later, depending entirely on the distance away the weapon is fired, will be heard a less distinct noise, the thump of the explosion of the round which was fired.

11. When the distance between firer and observer is short, so will be the time lag between the crack and thump; as the range between the two increases, the time lag between the two noises will also increase. It is possible to tell the approximate range at which a weapon is being fired by the time between hearing the crack and the thump, always supposing that the observer is more or less in the line of fire.

12. The natural tendency for the observer will be to look in the direction of the crack, but this must be resisted, as it is by discovering where the thump comes from that the firer will be detected.

13. Tell the squad that the speed of the bullet is 600 yards or 1800 feet a second and that of sound about 350 yards or 1100 feet a second. As an example, if a bullet is fired towards the observer from a distance of 600 yards, the time lag between the crack and thump will be something rather less than one second.

#### **The demonstration**

14. Tell the squad that a firer at 300 yards is going to fire one or more rounds towards them, and give a signal for this. Question the squad on their estimation of the time lag between the crack and the thump. Repeat the process with a firer firing from 600 yards away.

15. Explain that, in battle they will hear many cracks and thumps, and get all the demonstrators to fire at once. Question the squad on the number of firers they think there are firing at them.

16. Each demonstrator in turn is now made to fire a number of shots on a separate signal for each shot; after the first shot the men are asked to estimate the range; after the second shot they are asked to locate the firer; before the third shot the men are told to use their instruments and watch the area particularly for signs of movement, muzzle flash or smoke. A similar procedure is then carried out for the remainder of the demonstrators.

17. Finally explain that when using the crack and thump method in connection with an automatic weapon, the observer must only take notice of the last round of each burst.

#### **Conclusion**

18. Questions to and from the squad.

19. Sum up.

### **LESSON 51.—STALKING FILM STRIP A INSTRUCTOR'S NOTES**

#### **Aim**

1. To revise the subject of stalking.

#### **Stores**

2. Film Strip No. 849 and Instructor's Notes. Film strip projector and screen.

**Instructional knowledge**

3. The instructor should preview the film strip and prepare his lesson plan, bearing in mind the fact that most, if not all of his class will be familiar with the subject.

After the lesson the squad should be taken out on the ground for Lesson 52 "Selecting lines of Advance."

**B CONDUCT OF THE LESSON****Preliminaries**

4. Arrange film strip projector, screen and seating.

**Approach**

5. Although all infantrymen are taught how to stalk, the sniper must aim at a higher standard.

**Presentation**

6. Show the film strip through, bringing out the main points by question and answer.

**Conclusion**

7. Questions to and from the squad.
8. Sum up.

**LESSON 52.—SELECTING LINES OF ADVANCE****A INSTRUCTOR'S NOTES****Aim**

1. To teach snipers how to select lines of advance.

**Stores**

2. 1 coloured flag to each squad. Binoculars and telescopes.

**Instructional knowledge**

3. The coloured flag, to denote the enemy position, must be placed out 400 yards or more from squad starting point and must be visible from there.

4. The ground chosen should permit more than one route to be used so that the pros and cons of various alternatives may be discussed. The most suitable type of ground is undulating, providing problems in the crossing of crests, etc.

5. Large squads should be divided into and work in pairs; in smaller squads each man should work alone.

6. All viewing of the ground must be done from proper concealed positions of observation or a false impression of the difficulties will be obtained.

Two 40-minute periods are required.

## B CONDUCT OF THE LESSON

### Approach

7. The sniper must always make certain of a kill with his first shot by getting into a position about 150 to 200 yards from his enemy. If he is to do this he must be expert at using ground to reach his fire position without being seen and to this end the choosing of a really good line of advance is more than half the battle.

#### Considerations when choosing a line of advance

8. Explain that the ideal approach would consist of cover from view and protection from fire at the same time providing good fire positions and observation points throughout its length; the first two considerations are usually found in low ground while the latter are associated with high ground. It will be necessary to find the best balance between the two. The position of other troops in the area will have to be considered and what type of movement is likely to be possible, *eg*, walking or one of the crawls; the timing of a stalk will depend very largely on this.

9. Ask the squad some questions on what has been taught so far.

10. Since it will very rarely be possible to choose the exact final killing position from the starting point, only its rough area and route to it need be decided in the first instance. It will indeed be a rare stalk when a detailed study, even with the aid of optical instruments, of all the ground to be covered, can be made. It will normally be found necessary to split the advance into a series of bounds, making a detailed plan to deal with each as it is encountered, noting particularly likely useful pieces of cover. It must be remembered that once committed to a certain line of advance, it is often impossible to discard it in favour of another so that skilful appreciation of the ground from the starting point is vital. It must be appreciated that the sniper can often obtain concealment by moving to a flank in order to get a bush or tree between himself and the enemy. (*See Fig 62*).

#### Keeping direction

11. Emphasize the importance of keeping direction; it is all too easy to arrive at what is imagined to be the selected fire position to find that a similar feature and not that intended has been reached.

If possible two distant landmarks behind the position being stalked and in line with it and each other should be selected and memorized; it may also be helpful to memorize a landmark behind the position from which the stalk started; only by constant reference to these points can a stalker be sure of keeping his line. In the absence of such landmarks and even if they are present a study of the position of the sun and direction of the wind should be made; both may be a great help in keeping direction.

The compass may also be of use on a very long stalk.

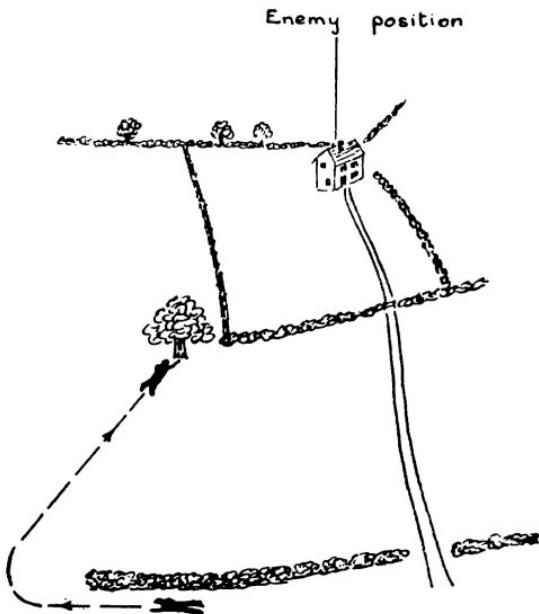


Fig 62.—Selecting a line of advance.

12. Only a great deal of practice will produce the very high standard required in the aspects of training covered in this lesson.

#### **Practical selection of a line of advance**

13. The instructor should point out the flag denoting the enemy position and any limitations such as boundaries he wishes to impose and allow the men about five minutes to decide the *area* of their final killing position and the route to it; one man from each pair should then be told to describe the decisions the pair has made. At this stage it will be as well to discuss any obviously bad mistakes, getting the reasons from the squad by question and answer.

14. *Moving to the first bound.*—Get the men to consider how they would move to their first bound and most important of all, what observation of the remaining bounds they would expect to get from there. Emphasize the great importance of always looking ahead and considering and examining *bounds in advance*. Tell the men that a sniper must be able, from a given point, to select a bound and choose a point of observation with the absolute certainty that, when he gets there, there will be adequate cover for him and a view of his next bound.

15. Make each man in turn give his solution of the problem and then select one of them to put his ideas into effect; make the rest of the squad follow every movement as far as the first bound. Sum up now, with the aid of a discussion, whether the decisions were good and in what way improvements could have been made; discuss particularly whether the bound and point of observation provided adequate cover when the man got there and whether a good view was obtainable of the next selected bound.

16. Repeat the procedure for each of the other bounds using a different man each time and at each discussion emphasize the importance of the selected point giving good cover from the enemy's view and also good observation of the next bound to be approached.

17. On reaching the final objective the men are made to turn round and see the ground over which they have just moved. With the men observing the ground from the enemy's angle, point out which lines of advance would seem most obvious to the enemy and any features that he would have had under constant scrutiny. Point out that it is a combination of these last two factors which will have to be borne constantly in mind when choosing a route.

### **Conclusion**

18. Questions to and from the squad.

19. Sum up.

### **LESSON 53.—PANORAMA DRAWING**

A military panorama is a reproduction on paper of a view obtained from any given point. Such a drawing will often produce the clearest and most concise method of illustrating a report or a sniper's log.

Snipers must be able to make a military panorama. The necessary instructions will be found in "Notes on Map Reading, 1929."

### **LESSON 54.—OTHER POSITIONS**

#### **General**

1. The sniper will not always be able to fire from a well prepared position. According to the task in hand he may have to fire from any of the positions he has already been taught, using the sling in each case; he should now be revised in these positions (*see Pamphlet No. 3, Lessons 53 and 58*) and in addition be taught the "back" position which is specially useful when firing down slopes.

2. As there is only one new position to be taught in this lesson it will be found a useful opportunity to confirm the other positions, except the lying, both in the open and behind cover; a man may have found in the past that he could easily get comfortable kneeling over cover, for example; now, with the sling in use he may have to modify his position quite considerably to get the best results.

3. The different positions should be practised progressively, using the sling; those in the open should be revised first before going on to the incorporation of the use of cover.



Fig 63.—The back position.

#### The back position

4. Explain and demonstrate, that the butt is in the shoulder and the left hand can be on the butt. The fore-end of the rifle should be rested on the crossed legs, the position of which can be slightly altered to give depression or elevation. It will be found that as the eye is so far back from the sight, only a small aperture will be seen; difficulty may, therefore, be experienced in picking up the target; for this reason the head must be kept perfectly still by resting it on the telescope case, other convenient object, or rising ground; it will be found a very accurate position from which to shoot. (See Fig 63).

#### LESSON 55.—SHOOTING 8—HAWKINS POSITION. APPLICATION AND SNAP 200 AND 300 YARDS

#### LESSON 56.—AIR PHOTOGRAPH INTERPRETATION

The sniper must be made to realize the value of air photographs. He must know their advantages and limitations and on what occasions they are likely to be of more or less value than a map.

This subject can be studied in the films:—

“The need of Air Photographs” (C.878).

“How to read Air Photographs” (C.879).

and in the publication “The Interpretation of Air Photographs, 1943.”

## LESSON 57.—DEMONSTRATION STALK

### A INSTRUCTOR'S NOTES

#### **Aim**

1. To show the snipers a stalk well done.
2. To show the practical application of the Stalking Film Strip.

#### **Stores**

3. Boundary flags, flags to mark the squad's position, camouflage kit, binoculars for each member of the squad.

#### **Instructional knowledge**

4. An area of ground must be selected on which two or three demonstrators can make a stalk of about 300 yards to within a distance of 150 yards from the observers without too much exposure. It is advisable that a time limit be imposed.
5. There is a danger that some less interested men find an element of boredom in the demonstration stalk during which, for perhaps 30 minutes, they should see nothing at all. However, seeing is believing, so, in this case is NOT seeing.
6. The instructor should point out the great strain of concentration in watching for even 30 minutes at a stretch. He should emphasize that under active service conditions, snipers will often have to watch for far longer periods than this with just as little to see as in this demonstration.

### B CONDUCT OF THE LESSON

#### **Preliminaries**

7. Boundary flags in position.
8. The squad should be in a position of observation, either sitting or lying, between 400 and 500 yards from the stalkers' starting point.

#### **Revision**

9. Stalking Film Strip.

#### **Approach**

10. Remind the squad that in order to make certain of a kill the sniper should endeavour to get within 150 yards of his quarry; this may sound easy in theory, but it is not easy in practice; this demonstration will show that it can be done with a minimum of exposure.

#### **The demonstration**

11. Explain to the squad that the demonstrators now seen standing up about 500 yards away will, on a given signal, go to ground and will try and

get to within 150 yards of the observer's position without being seen. At the end of the time limit, a whistle is blown and the stalkers stand up where they have got to.

12. If the stalkers were seen at all by the observers, discuss with the squad where and why.

13. The observers should then be taken over the ground by the stalkers who bring out all the points which decided them in selecting their main line of advance and subsequent moves.

#### **Conclusion**

14. Final discussion.

15. Questions to and from the squad.

16. Sum up.

### **LESSON 58.—SHOOTING 9—APPLICATION 200 YARDS OTHER POSITIONS**

### **LESSON 59.—AIR PHOTOGRAPH INTERPRETATION EXERCISE**

#### **A INSTRUCTOR'S NOTES**

##### **Aim**

1. To consolidate by practical application the points brought out in Lesson 56 "Air Photograph Interpretation."

##### **Stores**

2. Maps and air photographs of a local area.

##### **Instructional knowledge**

3. A high view point should be selected for this exercise from which a good view of the ground to be used can be obtained; only from such a position can a true comparison of the ground and air photograph be made.

#### **B CONDUCT OF THE LESSON**

##### **Preliminaries**

4. Issue the maps and photographs and tell the squad to go to the view point shown on the air photograph or to a given map reference.

##### **Approach**

5. An air photograph will show ground features in far more detail than a map since the scale of a map, in all but the very largest, limits the number of conventional signs which can be shown with clarity. The very large scale maps, which are in existence, would not be a feasible proposition

for use under active service conditions. Such features as paths, hedgerows and individual houses are all clearly seen on an air photograph which is, moreover, up to date from the point of view of new roads, buildings, etc, which have in all probability been constructed after the map was made. In addition, of course, man-made earthworks and the like will show up on the air photograph which could not possibly be shown on a map.

Air photographs will not normally show up ground heights except in the case of very steep and high hills which may under certain conditions of light, throw a shadow on the ground. Maps, however, disclose heights when the contours marked on them are read.

6. Get the squad to set their maps and air photographs and to locate their exact position on the map.

7. By a comparison of features shown on the map and air photographs with those visible on the ground, bring out the following:—

#### Roads

8. *Main roads* will reveal themselves as being generally wider than others with long straight stretches.

9. *Secondary roads* will show up as being generally more twisting.

10. *Tarred roads*, though normally actually black in colour, show up as dark grey with, often, a lighter strip due to accumulated dust showing up at the edges.

11. *Macadamized roads* appear light grey.

12. *Concrete roads* appear a uniform white.

13. *Tracks* across grass or vegetation will appear light in tone and those across wet ground or sand will appear as dark lines. Those of horse drawn or three-wheeled vehicles will appear as three parallel lines and four, six or more wheeled vehicles and tracked vehicles will leave parallel lines; the marks of tracked vehicles may be conspicuous by skid marks when turning.

14. *Railways* have the characteristic feature of long straight stretches punctuated by embankments, cuttings and bridges and where a change of direction is necessary this is always very gradual; in tone a railway is medium grey.

15. *Telegraph poles* may be distinguished by their shadows or by their regular spacing showing up as white or black dots according to the season of the year.

16. *Electric pylons* are identified by their shadows, and their concrete base, if constructed, will show up white. Their course is usually straight across country though woods are avoided whenever possible. On some occasions rides are cut through the woods immediately below the overhead wires.

17. *Woods* are generally dark in tone, varying in shade with the time of the year and the kind of trees. Single trees usually appear as dark round blobs, their shadows often being visible.

18. *Gorse* appears very dark.

19. *Orchards or plantations* are distinguishable by the regular spacing of the trees planted there.

20. *Grass.* Meadow grass is usually a medium grey; long grass will probably show up as dark grey.

21. *Corn crops* are, as a rule, light grey in appearance when they are young but darken as they grow; wheat and barley, when ripe, usually appear light in tone due to the colour of the matured crop. Stubble can normally be expected to show up almost a light grey.

22. *Hedges and boundaries* are confusing and it is often difficult to distinguish between the two at the edges of fields; this is because of their narrowness and the intermingling of shadows. Care must be taken to avoid confusing a sharp dividing line between two slightly different types of crops with a hedgerow, ditch or wall.

23. *Disturbed earth and ploughed land.*—Compressed earth or made ground which has been well trodden on appears lighter in tone than freshly ploughed land which appears dark owing to its broken surface; this gradually becomes a lighter shade as the earth settles down. The actual colour of the soil also affects the tone, chalky soil appearing lighter than a red or dark soil. Furrows can usually be clearly seen.

24. *Shadows* can show the height and shape of objects not visible or distinguishable on an air photograph. *eg*, factory chimneys, towers, steeples and trees, etc: the approximate height of such objects can be gauged by comparing the length of the shadow to that of some known object.

25. *Roofs of slate* show white.

26. *Water* when shallow shows up light, as little light is absorbed, and dark when the water is deep.

27. *Ground and cover.*—When the ground is of a rough and undulating nature, shadows are thrown by knolls and ridges; this gives some indication of where cover can be had from ground observation.

28. Discuss as many objects on the photograph as possible, bearing in mind that smooth objects reflect light and so appear light, and that rough objects absorb light and so appear dark.

### **Conclusion**

29. Questions to and from the squad.

30. Sum up.

**LESSON 60.—PRACTICAL STALK 1****A INSTRUCTOR'S NOTES****Aim**

1. To give the men their first experience, as snipers, of a stalk.

**Stores**

2. Boundary flags, flags to mark the observer's position, camouflage kit, one pair of binoculars for each two members of the squad.

**Instructional knowledge**

3. An area of ground must be selected on which half the squad at a time can stalk over a distance of about 300 yards to within approximately 150 yards of the observers.

4. A time limit for the stalk must be imposed.

5. One instructor should be at the observer's position making notes of the reactions of the observers and also watching for exposure of the stalkers, If possible, another instructor should watch, from a distance, all the work of the stalkers.

**B CONDUCT OF THE LESSON****Preliminaries**

6. Boundary flags should be placed out.

7. One half of the squad, with binoculars, should be taken to the observers' position. The other half should be taken to the stalk start point.

8. All the men of the squad should carry out their personal camouflage.

**The exercise**

9. One half of the squad is set off from the stalk start point and told to stalk within about 150 yards of the observers and when they have reached what they consider their fire position, to stand up.

10. The other half of the squad, sitting or lying, observe, using their binoculars.

11. When the first half of the squad have completed their stalk there should be a discussion of the work done.

12. The halves of the squad then change round and the stalk is done again, this time using the original start point as the observers' position.

13. A further discussion should then take place.

**Conclusion**

14. The instructor should sum up progress made bringing out good and bad points noticed. He may mention that future stalks will be over increasingly difficult ground.

## LESSON 61.—AIR PHOTOGRAPHS. MEASURING RANGES AND PLOTTING POSITIONS

### A INSTRUCTOR'S NOTES

#### **Aim**

1. To teach the sniper how to measure distances on an air photograph and how to plot positions.

#### **Stores**

2. Maps, air photographs, compasses, protractors, sheets of paper, a blackboard, tables and benches for the whole squad.

#### **Instructional knowledge**

3. It is advisable that this lesson be taken indoors and followed immediately by its practical application outside.

### B CONDUCT OF THE LESSON

#### **Preliminaries**

4. The squad should be seated at tables (2 to a table) where they can see the blackboard.

#### **Revision**

5. Questions on the other methods of judging distance.

#### **Approach**

6. It has been emphasized before and can be again, that in order to obtain a really high standard of shooting in the field, it is essential that the exact distance between the firer and his target should be known, so that the sights may be correctly set.

However experienced the individual, judging distance by eye is exceedingly difficult and inaccuracies are sometimes inevitable. The lesson now to be taught shows how exact distances can be worked out using air photographs in conjunction with the map; all snipers must be taught this invaluable method. Only vertical photographs can be used.

In addition, it will often be possible to plot accurately on the map the enemy's position with the help of an air photograph.

#### **Obtaining ranges**

7. With the squad using a map and air photograph show with the use of a blackboard how this is done:—

- (a) Two prominent features "A" and "B" are selected on the map which can be easily recognized on the air photograph.
- (b) The distance between "A" and "B" is measured in yards on the map.
- (c) A scale for use on the air photograph is made, an example of which is shown below:—
  - (i) The distance from "A" to "B" is found to be 1,500 yards.

- (ii) A line is drawn on a separate sheet of paper the same length as the distance between the two points "A" and "B" on the air photograph. *This line now represents 1,500 yards.*
- (iii) It is now necessary to divide this line into 100 yard divisions and to do this another line "A" — "C" is drawn any convenient length at an angle of not less than 30 degrees to line "A" — "B". (See Fig 64).

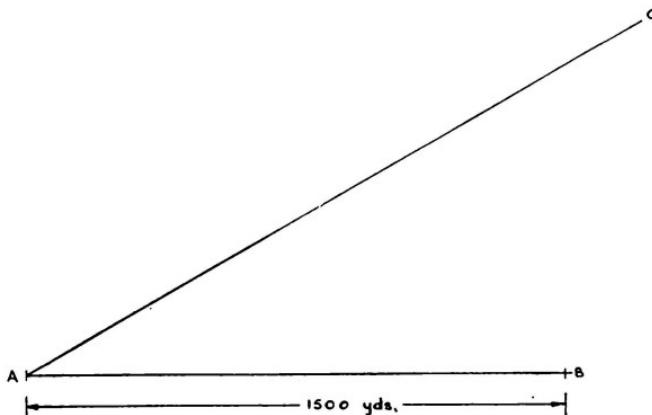


Fig 64.—Making a scale for an air photograph (1st stage).

- (iv) Fifteen equal divisions are now marked along this line "A" — "C" using  $\frac{1}{2}$ -inch or 1-inch measurements from a ruler; a start must be made from point "A". (See Fig 65).

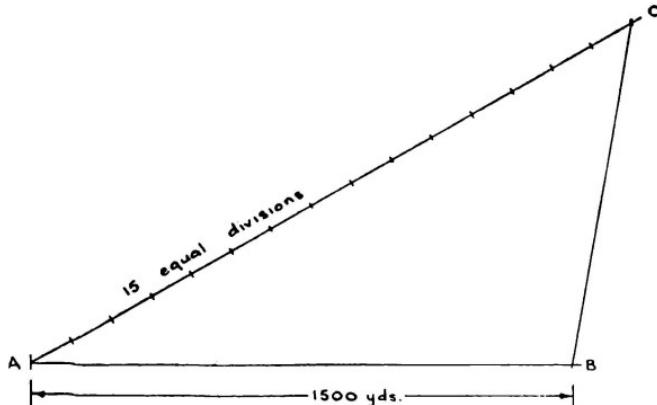


Fig 65.—Making a scale for an air photograph (2nd stage).

- (v) From the fifteenth division so marked a line is drawn to point "B" on the original line and parallel lines are then drawn to the original line "A" — "B" from each of the divisions marked on line "A" — "C". (See Fig 66).

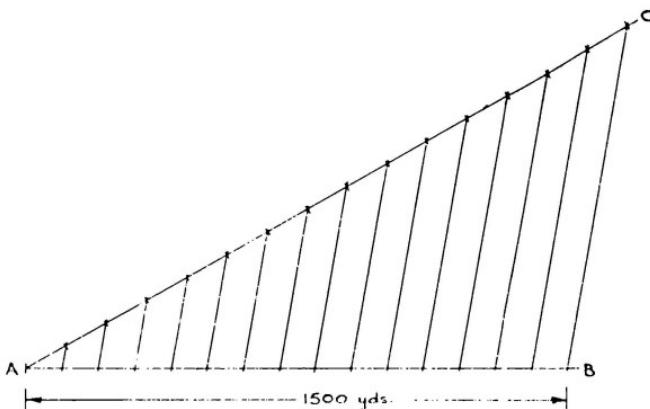


Fig 66.—Making a scale for an air photograph (3rd stage).

- (vi) The original line "A" — "B" is now found to be a scale for use on the air photograph each division giving 100 yards. (See Fig 67).

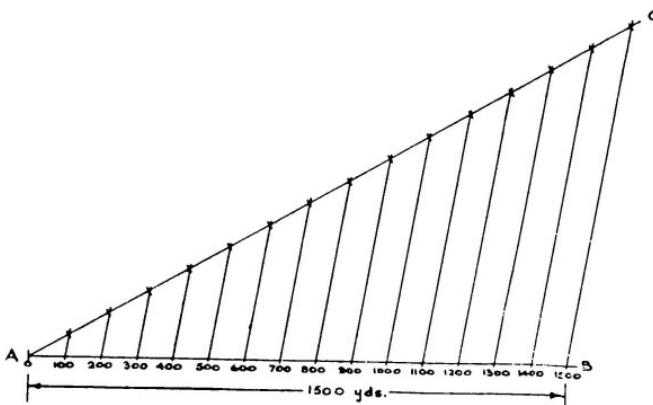


Fig 67.—Making a scale for an air photograph (4th stage).

#### Using the scale

8. Explain that if our own position on the ground and that of the enemy (or some nearby feature to him) can be pin-pointed on the air photograph, the scale is laid between the two points and the distance between them read off.

9. Practise the squad in making scales and measuring distances from air photographs.

#### Plotting enemy positions

10. Explain that if our own position can be pin-pointed on the air photograph but that of the enemy cannot, the compass can be used to help solve the problem; this is done by:—

(a) Taking a compass bearing on to some prominent feature recognizable on the air photograph; this feature should be within the normal arc of observation if possible. A line is now drawn from our own position to the prominent feature on the air photograph and a mental note made of the bearing.

(b) Taking a compass bearing on the enemy position; the difference between this and the first bearing is then worked out and a line drawn with the protractor on the air photograph using the number of degrees difference there was found, the original line drawn being used as a base line. The enemy position is somewhere along this second line on the air photograph. (*See Fig 68*).

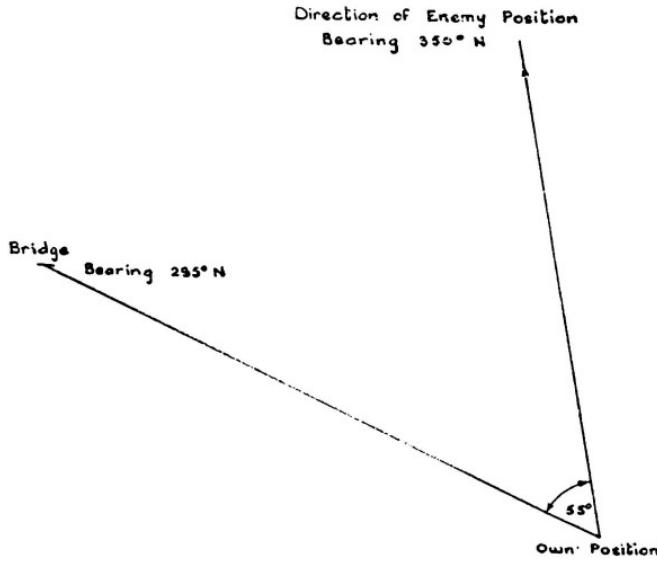


Fig 68.—Plotting an enemy position (single bearing).

11. It is, of course, impossible to get a cross bearing on to the enemy position from the one position and it will not always be possible to move elsewhere in order to do so. However, there is usually no difficulty in

plotting the exact position that is being searched for, by comparing other prominent features on the line on the air photograph with features visible on the ground.

### Cross bearings

12. Should it be possible to move to another position some distance to a flank of the first it will then be possible to get a cross bearing and pin-point the enemy's position. The first part is carried out as already explained, a move to a flank being then made and the process repeated from the new position; where the second lines in each case cross should be the enemy position. (See Fig 69).

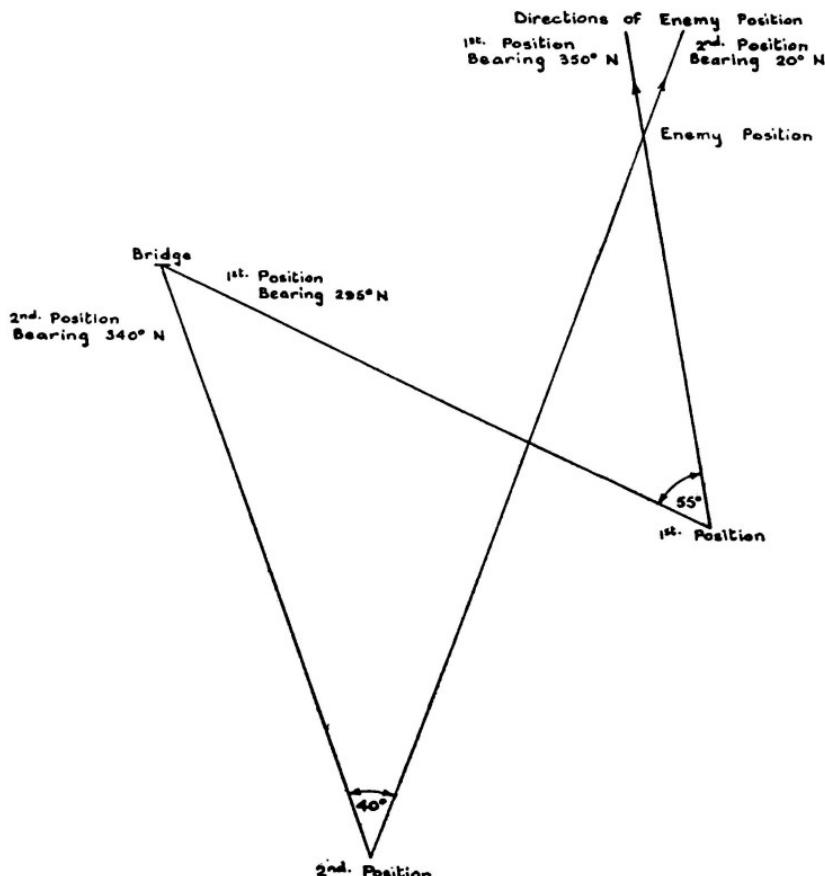


Fig 69.—Plotting an enemy position (cross bearing).

13. Practise the squad in both phases.

#### Conclusion

14. Questions to and from the squad.

15. Sum up.

### LESSON 62.—NIGHT WORK—INTRODUCTION

Much of the sniper's work will have to be done at night so it is essential that he should know the difference between day and night vision and how best to use his eyes and binoculars at night.

Full details of the lesson will be found in Pamphlet No. 2, Lesson 18.

### LESSON 63.—OBSERVATION EXERCISE—TELESCOPE 3

This observation scheme should be carried out in much the same way as was done for Lessons 46 and 49. Demonstration men should be used dressed up in camouflage suits and put in positions taking full advantage of shadow and background to blend with their camouflage.

It is advisable to have one man well concealed at close range. None of the men must be concealed behind bushes, walls, etc, but must have a clear view and be able to fire at the observers, but they must be visible only with the use of the telescope.

After a reasonable time for observation get each demonstrator to move out and then back again to his concealed position.

### LESSON 64.—MAP READING PRACTICE TEST

This test should be carried out across country which provides a variety of natural and other features and should, if possible, be ground with which the sniper is not already familiar.

It should incorporate everything that the sniper has been taught in connection with map reading; it should start with the men being made to pin-point their starting place, then being told to go to a certain map reference. There they should be given a grid bearing on which they are to move for so many hundreds of yards, they would then probably get a magnetic bearing on which to go for another specified distance; at the next check point they might be told to go to another map reference and so on. Incorporated in the test they should, on certain occasions, be told to keep in the shadow of some hedge and during one of the legs of the move they should be told to look out for and log any article of military equipment that they notice.

Great care will have to be taken in the organization of this practice test, at some check points there will be a painted board giving directions for the next leg of the course and at others there will be NCOs with the necessary instructions. In the event of no NCOs being available, and at all points where there is not anyhow intended to be one, there should be a box in which are placed coloured or numbered cards, one for each man undergoing the test. Each man will be expected to clock in at the final check point with a complete set of cards of his colour or bearing his number.

#### **LESSON 65.—SHOOTING 10—APPLICATION PRACTICE AT 200, 300 AND 500 YARDS, IRON SIGHTS**

#### **LESSON 66.—PRACTICAL STALK—2**

This stalk should be run on similar lines to Lesson 60. The country chosen should be of a more difficult nature and the stalk should be carried out by men working as a pair of snipers taking turns in leading and observing as they move forward.

#### **LESSON 67.—LOCATING THE ENEMY AT NIGHT**

Night observation is a vital part of the sniper's training; he should have much practice at this and also night movement. He must be trained to use his ears as well as his eyes and even though he may not be able to see anything he must be able to make deductions from sounds he hears. He must be familiar with the different sounds of enemy weapons and be able to estimate, roughly, their range and direction even though he may not be able to see the flash; the use of the compass and prominent objects visible on a sky line will be a great help in accurately reporting such incidents.

To this end it is advisable to teach the sniper Lesson 21 of Pamphlet No. 2, incorporating additional battlefield noises such as men digging and using picks, wiring, laying mines, etc. It should also be arranged that weapons should be fired to make the scheme more realistic. The instructions contained in Section 16 of Pamphlet No. 31 should be carefully studied and obeyed. The sniper should use binoculars for this lesson.

#### **LESSON 68.—SHOOTING 11—APPLICATION AT 200, 300 AND 600 YARDS, TELESCOPIC SIGHTS SNAP AND MOVING TARGETS AT 200 AND 300 YARDS, TELESCOPIC SIGHTS**

### LESSON 69.—PRACTICAL STALK—3

This stalk should be progressively more difficult than the last one and should be as much under war conditions as possible.

The stalkers and observers should have rifles and blank cartridges.

Two men at a time should carry out the stalk followed by two critics who watch their every movement, conforming to them as closely as possible; they must be prepared at the end of the stalk to criticize the work done.

Two observers should be in position and should fire one round of blank each time they see one of the stalkers and two rounds each time they spot the other.

At the end of the stalk, the observers explain what they saw and the critics who were following give their verdict of the main points they noticed in the selection of the lines of advance and all movements of the stalkers.

The instructor should then sum up.

The exercise should be repeated till all the men have done the stalk.

### LESSON 70.—SNIPING FROM HIDES AND BUILDINGS (LECTURE)

#### A INSTRUCTOR'S NOTES

1. A large blackboard and/or diagrams should be used to illustrate the points of the lecture. Demonstration hides of various sorts should be available for inspection at the end of the lecture to consolidate the points brought out.

#### B CONDUCT OF THE LECTURE

##### **General**

2. During static periods and in defence, or even on some occasions during movement, snipers should, whenever possible, build hides because more efficient work can be carried out when:—

(a) There can be a certain amount of free movement without fear of detection.

(b) Some protection from the weather and shrapnel is available.

3. Hides will vary considerably in type; it is not possible to list them all, as their construction will depend so much on the conformation of the ground available, and on the ingenuity and inventive genius of those constructing them.

4. Some of the many possible locations for hides are under hedgerows, in ruined buildings, in rubbish heaps, the edge of a cutting, etc; conspicuous landmarks must be avoided.

5. Hides may be built of stone, brick, wood or turf but bearing in mind that hides will, more often than not, have to be constructed at night in close proximity to the enemy, there will only rarely be a chance to put up anything of an elaborate nature. It is most important to remember that there will hardly ever be opportunity to see the hide from the front and what it looks like to the enemy. An enlarged fire trench with some improvised head cover, will often be all that is possible. (See Fig 70).



Fig 70.—An “enlarged fire trench” hide

It is always advisable, but not always possible, to make hides bullet proof.

6. One of the simplest and quickest to construct is the “Belly hide” in which the dimensions, except for the depth, are the same as the enlarged fire trench type. (See Fig 71).

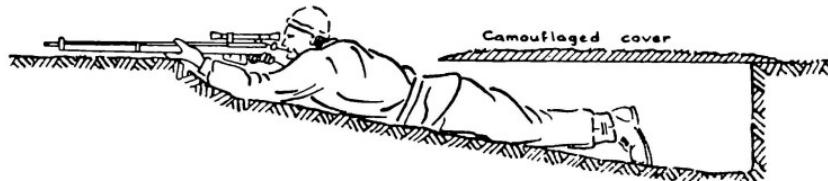


Fig 71.—A “belly” hide

7. There may be occasions on which the help of the RE can be obtained to construct more permanent hides but this will only be possible when there is a long term defensive policy.

#### **Concealment**

8. Camouflage must always be carefully arranged and must be of the highest order; under no circumstances must the natural appearance of the ground be altered. Spoil must therefore be hidden and may have to be carried right away in sandbags. Cover from view is cover from *aimed* fire but all camouflage will be time wasted if the sniper is observed getting to his hide.

9. Movement round the hide must not be allowed and no one except the snipers must visit it; track discipline must be scrupulously observed and, unless there is a good covered approach, the hide and any alternative hides can only be entered and left during hours of darkness.

10. Unnecessary movement inside the hide must be avoided and practice is needed in keeping still for long periods.

11. The flash from a shot fired at dawn or dusk will almost certainly give away the position.

12. Light shining from the rear of a hide through the front loophole may give the position away; a screen over the entrance must, therefore, be provided and another one over the loophole. The two screens must never be up together. Snipers must remember to lower the entrance screen as soon as they are in their hide and lower the loophole screen immediately before they leave it. If this precaution is neglected, light will shine straight through the two openings.

13. The surroundings of the loophole and the ground outside must be well damped if there is likely to be any danger of dust rising when a shot is fired.

14. On frosty mornings and damp days there is the greater danger of smoke from the rifle giving away the position. On such occasions the sniper must keep as far back in his hide as possible when he fires.

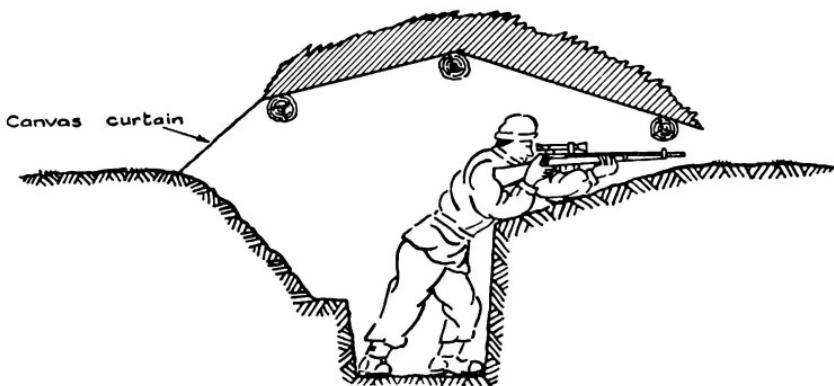


Fig 72.—A semi-permanent type of hide

### Comfort

15. The sniper and his mate must be comfortable, within reason, in their hide and they must have sufficient room to use the rifle and observe with ease; there must be sufficient head room, bearing in mind that the head will come higher with a sniper rifle than with an ordinary one owing

to the height of the telescopic sight. If the hide is not big enough the men will soon get cramped and their work will suffer; it may even be possible to construct a small seat.

### **Loopholes**

16. *Loopholes* require care and practice in their construction so that they cover the required field of fire.

17. They should be wide at the back allowing adequate traverse and narrow in front but not so narrow that a fair vision is impaired.

18. Loopholes may be camouflaged by making them through old tins, old boots or other rubbish that is natural to the surroundings; objects of any kind not in keeping with the neighbourhood will be a target for suspicion and a constant source of danger. Nature's camouflage will often be the most effective and shadow provides the best concealment of all.

19. Since hides will normally have to be constructed after dark, some kind of daylight reconnaissance will be a great help, and two sticks should be placed in the ground to mark the site and required direction of the loophole; if this is not done it may well be found in the morning that the loophole is facing a direction that was not intended.

### **Further deception**

20. In order to muddle the enemy there should be as many hides as possible and the programme of their occupation irregular.

21. Still further to distract the enemy's attention and deceive him, dummy hides may be constructed, movements being shown by jerking some object at the end of a length of string or wire. In this way an enemy sniper may be induced to give his position away by firing at the lure.

### **Buildings**

22. Buildings can often offer the best opportunities as sniping posts under static conditions. They suffer, however, the great disadvantage that they may be the object of attention from the enemy's heavier weapons. Isolated houses will probably be singled out even if a sniper using it has not been detected.

23. They should be prepared for use in much the same way as other hides, similar precautions towards concealment being taken, loopholes being constructed and fire positions made.

24. Special care must be taken not to alter the outward appearance of the house by opening windows or doors that were found closed, or by drawing back curtains.

25. The actual fire position must be well back in the shadow of the room and any windows on the other side of the room or shell holes against which the sniper might be silhouetted, must be screened.

26. Loopholes may be holes in windows, shutters or the roof, preferably those that have been made by shells or other projectiles. If such loopholes have to be picked out of a wall they must be made to look like war damage.

27. Some form of rest for the firer and observer will have to be constructed in order to obtain the most accurate results. Furniture from the house—old mattresses, bedsteads and the like will serve the purpose admirably; if none of this material is available, sandbags may have to be used.

### **Conclusion**

28. Squads should now be taken round the demonstration hides to consolidate the points brought out in the lectures.

## **LESSON 71.—REPORTING AND OBSERVATION LOGS**

### **A INSTRUCTOR'S NOTES**

#### **Aim**

1. To bring home to the sniper the importance of keeping a log and of accurate reports and to show him the method of doing so.

#### **Stores**

2. Two large blackboards, coloured chalks, sheets of paper, tables for the squad.

#### **Instructional knowledge**

3. A simple sketch or panorama drawing should be drawn on one blackboard and on the second there should be drawn a blank observer's log.

## **B CONDUCT OF THE LESSON**

#### **Preliminaries**

4. The necessary kit should be issued to the men of the squad who should be seated at tables.

#### **Approach**

5. Snipers should always keep a log of their observations so that the value of these shall not be lost to Intelligence. Such a log should be handed to the battalion intelligence officer at the end of the sniper's tour of duty. Snipers must make it a point of honour that their reports are accurate, for on such accuracy may well depend many lives. However, their deductions and suspicions are also of great value and should be incorporated in the log so long as they are specifically mentioned as such. A simple panoramic sketch is always a most useful accompaniment of the sniper's report and he need be nothing of an artist to produce a drawing.

#### **Panorama sketch**

6. The squad should be made to copy the sketch from the first blackboard on to a sheet of paper and also to make out a blank observer's log with headings only from the other.

7. *The log and panorama* should now be filled in by the men while the instructor gives imaginary situations. A serial number for each situation should be given against it on the log and a similar number placed on the panorama in a position relevant to where it took place. The exact time and map references of each happening must be written down against the occurrence on the log. The action taken, if any, must also be recorded. (See Fig 73).

#### OBSERVER'S LOG

Name of observers	Tour of duty	Date	Position	Visibility
D. Mackenzie, Cpl	0800-1830	12 May	No. 2 Post	Moderate
R. Stewart, Pte			373641	

Serial	Time	Map reference	Object seen	Remarks or actions taken
1	0905	G. 384655	Bunker A X roads seen to be unoccupied.	
2	0930-0936	G 389661	Own artillery shelling road.	30 rds fired 27 on target.
3	1020	G 379682	Enemy wire observed south of Big Wood.	Triple concer-tina. Bearing 11° mag.
4	1415	G 388649	Enemy OP suspected in Red Gable End.	Reported to IO by telephone.
5	1505	G 382647	Two enemy observers spotted in hedge.	Range 300 fired two shots at 1645 hrs. One hit claimed.
6	1620-1625	G 388649	Own artillery shelling Red Gable End.	Three direct hits, two enemy ran out.
7	1710	G 377647	Enemy MG post located under large bush.	

8. Give the men further practice if time allows letting them work out their own imaginary situations.

### Conclusion

9. Questions to and from the squad.
10. Criticise work done.

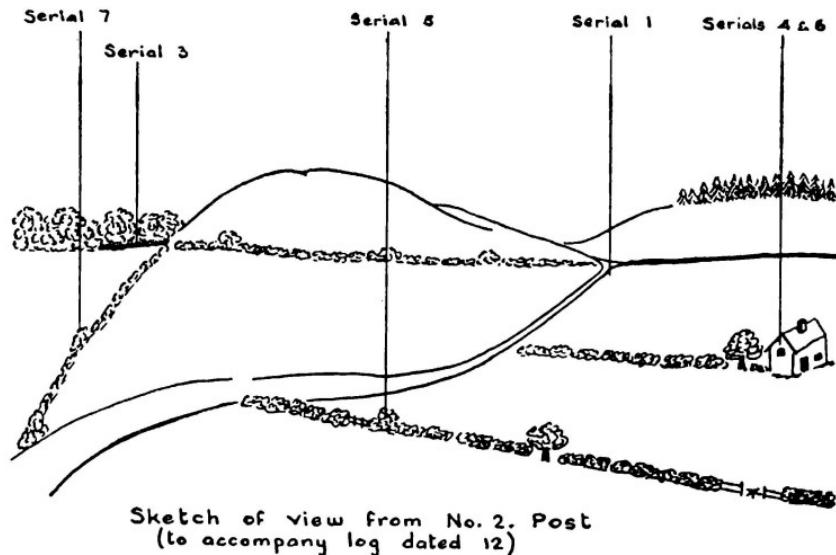


Fig 73.—Observers log and panorama sketch.

## LESSON 72.—LONG RANGE OBSERVATION AND REPORTS

### A INSTRUCTOR'S NOTES

#### Aim

1. To practise the sniper in observing the enemy up to a distance of several miles.
2. To give practice in keeping observation logs.
3. To give practice in making reliable deductions.

#### Stores

4. To each pair of snipers, one telescope, one pair binoculars, air photographs, maps, a compass, protractor, observation log and watch. There should also be two short wave transmitting and receiving sets if possible; the 88 or 31 set is ideally suitable.

#### Instructional knowledge

5. Only a purely imaginary example can be given here as ground and facilities will dictate what the unit sniping instructor can carry out. The conduct of the lesson will therefore only be taken as the roughest of guides.

6. Snipers should work in pairs and an observation post should be selected on high ground from which an extensive area of ground up to three miles in depth can be watched. Incidents should take place 500 to 3,000 yards away from the observers and should be carried out by a number of demonstration men simulating the actions of an enemy. These incidents must be carefully rehearsed before the scheme takes place and should be controlled with wireless sets, one very close to the observer's position and the other with the enemy; 18 or 31 sets are best for the job. Situations by the enemy can then readily be controlled by the officer with the observers.

7. An opportunity must be provided at some later date to discuss the logs which by then must have been checked.

## B CONDUCT OF THE LESSON

8. Explain to the snipers that they are to imagine that they have been sent forward to take up an observation post where they now are; and that they are to observe and record any enemy military activity that they see between certain boundaries up to so many yards distance.

9. Get the snipers to set their maps and photographs and locate their position; the area to be watched should be explained and marked on the maps and air photographs. The demonstrators should now be told over the air to start their "incidents" examples of which are given below:—

- (a) Enemy transport is observed moving along a road; the lorries stop and 20 men or so debus and go into a wood.
- (b) Enemy troops are seen to leave the wood and move along a hedge-row towards a farm house.
- (c) A group of four men are seen to move forward and take up a fire position at the corner of a field; a second enemy party appears and start digging. A short time later some of this party return to the transport and start carrying some objects back towards the digging operations.
- (d) A third party appears and starts digging in and moving round a gateway to a field.
- (e) All the men then lay down their tools and run to fire positions. One man from each party runs off to the farm house and is seen to return a few minutes later; one of the parties of enemy are seen to open fire.
- (f) Smoke (representing shell fire) is seen in the wood where the lorries were left and all the enemy troops return hurriedly to the farm house. In a few moments smoke is seen coming from the farm house (representing the shelling of the farm).

10. The observation logs are collected and the scheme is discussed; the instructors may at this stage tell the squad all the incidents in case some of them were missed.

### **Conclusion**

11. Questions to and from the squad.
12. Sum up.

## **LESSON 73.—DEMONSTRATION—THE APPROACH TO AND OCCUPATION OF A POSITION BY TWO SNIPERS**

### **A INSTRUCTOR'S NOTES**

#### **Aim**

1. To show how a pair of snipers work together when moving in to a position, and also to demonstrate how they operate when they are there.

#### **Stores**

2. Some kind of falling targets or plates, or pull-up targets, or targets on poles. .303-inch ammunition.

#### **Instructional knowledge**

3. This demonstration must have been carefully rehearsed with special reference to all the points to be brought out.

4. For preference the lesson should be taken on a field firing range where a sniper hide has been previously built, to which there is a reasonably good approach. This hide must be so made that the spectators can clearly see all actions of the snipers.

5. Men in pits will be required to operate the targets which will appear on some pre-arranged signal; the best type of targets to use are "pull-up" targets, but targets on poles may be used. Plates if used, have the disadvantage that they remain down when hit and cannot be re-erected.

### **B CONDUCT OF THE LESSON**

#### **Preliminaries**

6. All necessary danger flags must be up.
7. Control flag at the hide and pit, if in use, must be lowered.
8. The squad should be on one side of the hide so that approach and all actions of the snipers in the hide can be clearly seen and their conversation heard.

#### **Approach**

9. When in action a pair of snipers must work together and have mutual

confidence. During a stalk or approach to a hide it should be instinctive for the No. 2 to cover the movement of the No. 1 and *vice versa*. There should be simple, easily understood signals between the two; their action in the hide should be entirely automatic.

#### **The demonstration**

10. Explain that the demonstration pair is about to start their approach to the hide from which they can dominate the area. The snipers start their approach on a given signal while the instructor gives a running commentary explaining, where necessary, the reasons for their actions during movement.

The instructor should make the squad notice the following:—

- (a) The careful observation from behind cover before any movement.
- (b) How one man covers the other when the latter is in the open.
- (c) The maximum possible use of dead ground.
- (d) That they make a final reconnaissance before going into the hide.
- (e) That there is a minimum of talking between the two.

11. The No. 1 finally crawls into the hide and chooses his own position and that for the No. 2; he then scans the ground with his binoculars before calling up the No. 2 who has meanwhile been getting his telescope ready.

12. The No. 1 then gives reference points and ranges and splits the ground up into right and left arcs for observation; the two men then search the ground in their allotted arcs and if nothing is seen they change arcs and observe again.

13. When the No. 2 spots a suitable target he will indicate it to the No. 1 who fires on No. 2's command while the latter observes for strike.

14. The instructor should then explain that the shot missed a number of inches high or low; the snipers should make their correction and on another appearance of the enemy pick out the leader and fire, the No. 2 again observing for strike.

15. Other situations may have been arranged after which the snipers should carefully withdraw and move to an alternative position or go away altogether.

#### **Conclusion**

16. Discuss the demonstration with the squad.
17. Questions to and from the squad.
18. Final summary.

#### **LESSON 74.—HIDES CONSTRUCTION (Daylight practice)**

As soon as possible after he has been given the lecture on the construction of hides the sniper should be given practice in making hides by day.

### **LESSON 75.—HIDES CONSTRUCTION (Night exercise)**

Two parallel ridges some hundreds of yards apart form the most suitable ground for the exercise and a tactical setting that one of the ridges is held by the enemy must be given.

Snipers, working in pairs, should be shown the area on one of the ridges in which to build their hide and the extent of the other ridge for which they will be responsible should be pointed out; half of those under instruction should be given one ridge on which to work and the other half the other ridge.

Previous to night practice the area should be reconnoitred by day, observation being kept from the opposite ridge. During the construction of the hides, in order to keep the snipers fully alert, some rounds of blank may be fired, small patrols sent out and flares let off. The hides must be manned by dawn.

At dawn the snipers should start to observe and try and locate the hides on the opposite ridge, logging any movement or incident they see.

After a reasonable time the snipers on one ridge should fire some blank, followed by the snipers on the other ridge.

Finally a discussion should be held and examination of all the hides should be made.

### **LESSON 76.—NIGHT STALKING EXERCISE**

This lesson should be conducted so as to revise all the points in Lessons 19, 20 and 25 of Pamphlet No. 2. Two examples of night stalking games are given in Chapter 9 of Pamphlet No. 2 and will be found useful; a variety of obstacles should be arranged and trip flares used.

### **LESSON 77.—SHOOTING 12—FIRING FROM HIDES EXERCISE**

This should be carried out on a field firing range using well concealed targets of a type which will disappear when they are hit; a hide from which a good view and field of fire can be obtained should have been previously constructed.

To each pair of snipers should be detailed another member of the squad who must, at the final discussion, be prepared to bring out good and bad points he noticed particularly in connection with co-operation, observation, movement, judging distance, fire effect, observation of shots and corrections.

### **LESSON 78.—LECTURE ON FIELD FIRING EXERCISES**

#### **General**

1. Field firing exercises are carried out to exercise the sniper in combinations of observation, fieldcraft and shooting under conditions approach-

ing, as nearly as possible, those likely to be found on active service. They form the culmination, apart from actual testing, of his training.

2. *Ingenuity* is always needed in adapting them to the ground and facilities available, but even where no field firing range exists, useful practice may be staged on a classification range. Some suggested exercises are given in this pamphlet, but they will generally need some modification to suit local conditions; they can therefore be regarded only as a rough guide and do little more than suggest ideas to the sniping instructor.

3. Appendix D of Pamphlet No. 31 "Notes on Infantry field firing exercises" should be studied.

#### **Preparation of exercises**

4. The purpose of any exercise must be to bring out definite lessons which should be strictly limited in number. These lessons, once decided, must be constantly borne in mind and the scheme developed *round them*.

5. Suitable ground must be selected at an early stage and a detailed reconnaissance made to make sure that there are no unforeseen obstacles and to determine any boundaries required.

6. It is best while on the ground, to decide on the exact requirements of *stores* and any work that it will be necessary to have done before the exercise takes place; it is also advisable at this stage to decide on the number of assistants that will be required.

7. The assistants taking part must be carefully rehearsed in their duties before the exercise is carried out.

8. After this preliminary work the exercise may be written in detail.

#### **Making out the exercise**

9. When writing out the exercise the following points will need special attention:—

- (a) The lessons it is intended to bring out.
- (b) The stores that will be required.
- (c) The narrative and tactical setting.
- (d) The actual method of conducting the exercise.
- (e) Any boundaries that have to be imposed.
- (f) A time limit if necessary.
- (g) Any signals that may be required and the action to be taken on them.
- (h) Safety precautions.
- (j) Administrative arrangements.

### After an exercise

10. There should always be a discussion after an exercise so that good and bad points may be brought to light and this should take place immediately after the end of the scheme. Those responsible should make notes during the exercise on the execution of the following points:—

(a) *Observation:*—

- (i) Handling of the telescope and binoculars.
- (ii) System of searching ground.
- (iii) Quickness in locating targets.
- (iv) Observation and correction of fire.

(b) *Fieldcraft:*—

- (i) Reconnaissance before movement.
- (ii) The route chosen.
- (iii) The method of progress.
- (iv) The carriage of arms.
- (v) The use of camouflage.
- (vi) If risks were taken, were they necessary and taken early.
- (vii) The method of keeping direction.
- (viii) Was good use made of cover.
- (ix) Did the final position give a good field of fire.

(c) *Shooting:*—

- (i) Weapon handling and sight setting.
- (ii) Holding and trigger release.
- (iii) Quickness in shooting.
- (iv) Result in shooting.
- (v) Judging distance. Use of air photographs and maps.
- (vi) Allowances for wind and movement.

These points are not exhaustive nor will all of them apply for every exercise.

### LESSON 79.—SHOOTING 13—FIELD FIRING EXERCISE 1

#### Lessons

1. Judging distance, indication of targets and observation, correction of fire between a pair of snipers.

**Layout**

2. A number of figure targets of various sizes at ranges from 100 to 500 yards which can be raised or lowered for varying spaces of time under control of the instructor at the fire position.

**Method**

3. The sniper will be told to engage any targets appearing on his front, his observer indicating them to him if necessary and giving him any corrections that may be needed.

**Ammunition**

4. 10 rounds per firer.

**Range**

5. Under peace time conditions this exercise will have to be carried out on a properly constructed field firing range.

**LESSON 80.—SHOOTING 14—DUSK AND DAWN FIRING**

The telescopic sight enables accurate shooting to be done when it is too dark to aim with aperture sights of normal pattern though targets are still visible to the naked eye. With the telescopic sight an accurate aim can be taken at anything that the naked eye is able to discern. Such conditions will normally occur at dusk and dawn; there may be occasions during bright moonlight when the telescopic sight can be used with advantage. Since the enemy will hope to carry out many essential tasks at such times, the sniper should be given practice at dusk, dawn and moonlight firing.

It should be noted that the contrast between the target and its background rather than the state of the light is the factor which governs its visibility. A target on a skyline can be aimed at with the telescopic sight in conditions of almost complete darkness.

During any night firing that is carried out the men under training should be made to notice the visibility of various targets against different backgrounds, at varying ranges and conditions of darkness.

It will also be found that, as in ordinary night vision, there is an advantage in looking slightly slantwise through the sight and with a little practice it is possible to take an aim this way; best results under the conditions of very poor light will be obtained in this manner.

Practices should be arranged to suit local conditions and figure targets should be used.

**LESSON 81.—SHOOTING 15—FIELD FIRING EXERCISE 2****Lesson**

1. Stalking and shooting a selected target.

**Layout**

2. Two assistants will be required in a bullet proof pit close to which is a target to be stalked by one of the firers. There must be a periscope in the pit and two figure targets, one head only and one head and shoulders, both of which should be mounted on long poles.

**Method**

3. Sniper "A" is shown the stationary target and given instructions to stalk to within killing range of the target and shoot it.

4. Sniper "B" is given an area to a flank in which to select a fire position to cover the pit.

5. The assistant with the periscope will watch for all movements of Sniper "A" and each time he sees him the second assistant will raise one or other of the figure targets depending on the amount of exposure detected. This target will be lowered immediately Sniper "A" is no longer in view.

6. Sniper "B" will engage any target which appears from the pit and if he scores a hit will be considered to have killed Sniper "A". If Sniper "A" can stalk and shoot his stationary target he will have achieved his purpose and be considered the winner.

**Ammunition**

7. Sniper "A" 5 rounds, Sniper "B" 10 rounds.

**Range**

8. A properly constructed field firing range is necessary.

**LESSON 82.—JUDGING DISTANCE PRACTICE TEST**

To prepare the sniper for his test he should be given the opportunity of a practice test in judging distance under the same conditions in which it will be carried out. The ground for this rehearsal should, of course, be different from that for the final test.

**LESSON 83.—SHOOTING 16—FIELD FIRING EXERCISE 3****Lessons**

1. Taking up a concealed fire position and actions in position.

**Layout**

2. An area of a field firing range should be selected from which a number of pairs of snipers can fire together without being one in front of each other; a long low bank parallel to the target positions is the most suitable. Some types of falling targets, with numbers painted on them definable only

with the telescope, must be set up about 250 to 300 yards from the fire position. In a separate bullet proof pit there should be an assistant instructor with a periscope so situated that he can observe all actions of the firers from the moment they start to move.

### Method

3. The snipers are paired off and a number allotted to each pair. From a start line in rear of the fire position they should be shown the rough target area and the area within which fire positions may be taken up; the flanks of the area should be clearly marked and pointed out to the snipers. Precautions must be taken to prevent any possibility of the snipers firing over each other's heads. (See Fig 74).

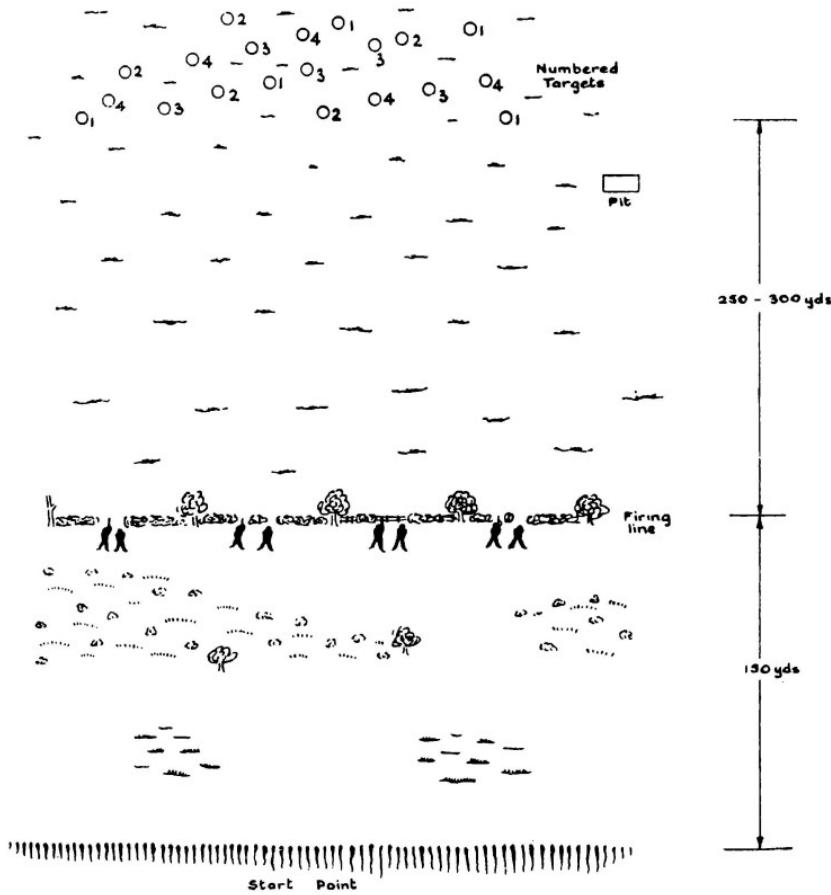


Fig 74.—Suggested layout for Field Training Exercise No. 3

4. The snipers should be set off together with instructions to stalk and engage any target they see bearing their pair number and at the same time to avoid being seen by the observer with the periscope.

5. Points should be awarded at the end for:—

Hits obtained on the targets.

Points should be deducted at the end for:—

(a) Bad movement into and actions in the fire position.

(b) Being observed through the periscope during the stalk or when in position.

#### **Ammunition**

6. 5 rounds per pair.

#### **Time limit**

7. Approximately 45 minutes.

#### **Range**

8. A field firing range.

### **LESSON 84.—OBSERVATION PRACTICE TEST**

The sniper should now have an observation practice test on different ground and with different objects to those that will be used in the final examination.

### **LESSON 85.—CONCEALMENT PRACTICE TEST**

This practice test must be given on ground that will not be used when the sniper is tried out for his sniper badge.

### **LESSON 86.—PRACTICAL STALK 4**

Further practice should here be given in stalking making the conditions increasingly difficult till they attain almost to actual test conditions.

### **LESSON 87.—SHOOTING 17—FIELD FIRING EXERCISE 4**

#### **Lessons**

1. Map reading, stalking, observation, taking up a fire position and shooting.

#### **Layout**

2. As for Field Firing Exercise No. 3 except that the assistant with the periscope will not, of course, be able to see the stalkers from the start.

### Method

3. Snipers in numbered pairs are set off from a place over a mile away from the fire position. They should be given the co-ordinates of an assistant instructor in a concealed position somewhere between the start point and the fire position and must try and avoid being seen by him. (See Fig 75).

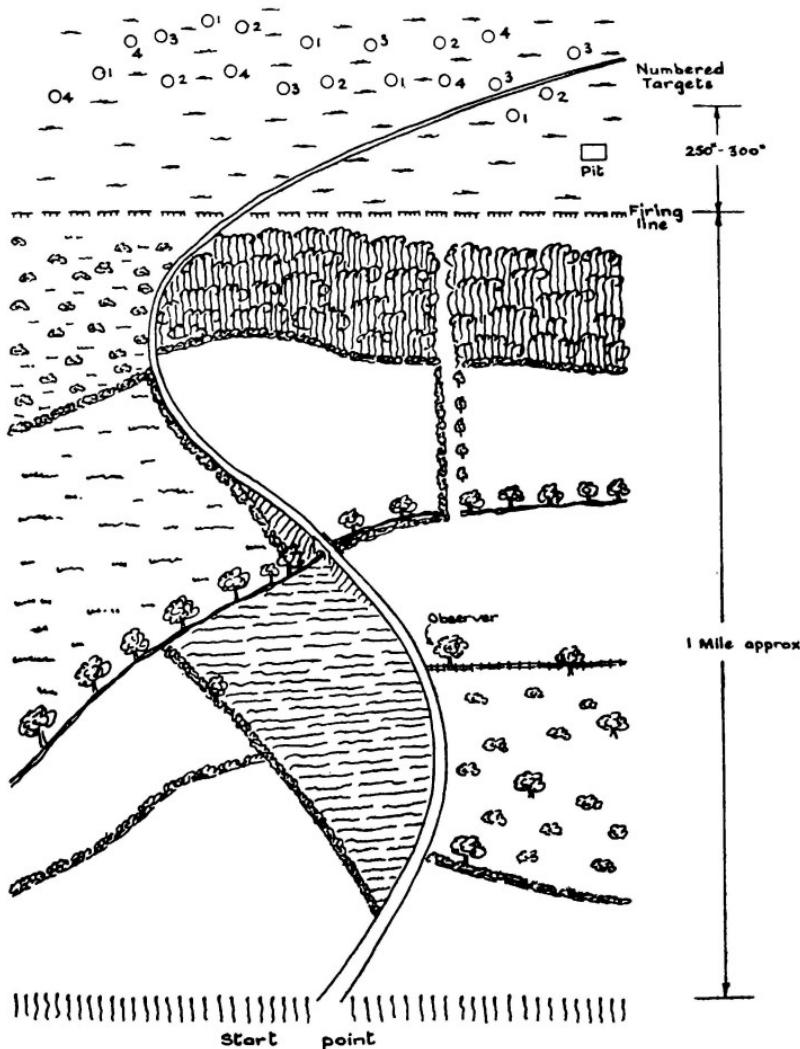


Fig 75.—Suggested layout for Field Firing Exercise No. 4

4. Once the fire position is being approached and when they are in it the rest of the exercise is carried out in like manner to Exercise 3.

**Ammunition**

5. 5 rounds per pair.

**Time limit**

6. Approximately 1½ hours.

**Range**

7. A field firing range with a suitable approach from the rear.

**LESSON 88.—SHOOTING 18—CHECK ZERO SHOOT AND SHOOTING PRACTICE TEST**

The sniper must be given every opportunity to make sure that his rifle is properly zeroed and to help him he should be given a run through the practices he will fire for his badge.

**LESSON 89.—STALKING PRACTICE TEST**

A last rehearsal of stalking under test conditions should be given on a different piece of ground to that which will be used for the final effort.

**APPENDIX A****THE SNIPER BADGE TEST****General**

1. In order to qualify for his sniper's badge, the sniper will, at the end of his training and thereafter once a year, be put through the tests laid down; at first glance these tests may appear to be very difficult and this is intended. The sniper must be a highly skilled specialist in such work. Unless he has mastered all his subjects there must be no possibility of him passing.
2. These tests may be carried out twice. In order to obtain the sniper's badge, the man must pass each test once out of the two attempts except that if he, then, fails in one test only, he may be tested again in three months time in that particular test and still obtain the badge. If he fails in more than one test he must be completely re-tested, but *not* within three months, during which time he should have further training.

**TEST No. 1.—GENERAL KNOWLEDGE**

Two questions on each of the following subjects should be set:—

1. The rifle mechanism, its care and cleaning.
2. The No. 32 telescopic sight.
3. The elevation table.
4. Allowances for wind and movement.
5. The telescope, scout regiment.
6. The binoculars.
7. Hides.
8. Movement or observation by night.
9. The use of the compass.
10. Air photographs.

**Standard**

15 of the questions and one on each subject to be answered correctly.

**TEST No. 2.—PERSONAL CONCEALMENT**

The sniper is to be given five minutes in which to conceal himself on suitable ground; he will be 200 to 300 yards away from an observer using binoculars and he must be in a practicable fire position in which he would be able to take accurate aim at the observer. The observer should

face about while the man under test is taking up his position and an assistant will get down in each position to check that the man could have taken accurate aim. The test should be repeated on two other pieces of ground and the man must successfully complete the test on two occasions out of three to pass.

#### TEST No. 3.—STALKING

The sniping officer should lay out this test to suit local conditions. There will be two observers using binoculars, and the stalk should start 600 to 700 yards away. The sniper must stalk to within 150 to 250 yards of the observers and fire a round of blank without exposing himself long enough for the observers *to make sure of a kill*. The ground selected should ideally provide more than one possible route and be of such a nature that every crawl that has been taught must at some time be used. During the stalk the man will fail if ever he exposes himself long enough for the observers *to make sure of a kill*. It will be seen that the observers must be most experienced and reliable snipers. A line should be taped beyond which the man must stalk before he is close enough to shoot at the observers.

#### TEST No. 4.—OBSERVATION

12 articles of equipment should be partially concealed between 100 to 300 yards from the observer's position. They should be placed out so that they are invisible to the naked eye, visible but indistinguishable using binoculars, and definable using the telescope. The articles should be within a 30 degree arc from the observers' position. Panorama drawings should be used by those undergoing the test. There should be a time limit of 40 minutes.

##### **Standard**

9 out of the 12 objects must be located and defined.

#### TEST No. 5.—MAP READING

The sniper will be taken out to unfamiliar country and given a 6-figure map reference for his position. He will then be given a 6-figure map reference of a point two miles away and told to walk there, using his map and, if necessary, his compass. (Men will have to set off at 10-minute intervals). 6 prominent features such as a house, the corner of a wood, a clump of trees, etc, between 300 and 2,000 yards away will then be pointed out to him.

Without any assistance he must give correct 6-figure map references for 5 out of 6 of the features pointed out to him; in 5 out of 6 cases he must also give the correct magnetic bearings of the features and their distance to within 15 per cent accuracy. Compasses and protractors may be used in the test.

**TEST No. 6.—JUDGING DISTANCE**

This test consists of judging 8 distances up to a range of 1,000 yards. The test will be carried out with the men in the lying position using their sniper rifles, telescopes or binoculars to help them if they wish. Distances will not be judged on to human beings or figure targets.

**Standard**

5 of the ranges must be judged to within a permissible margin of 15 per cent of the correct distance.

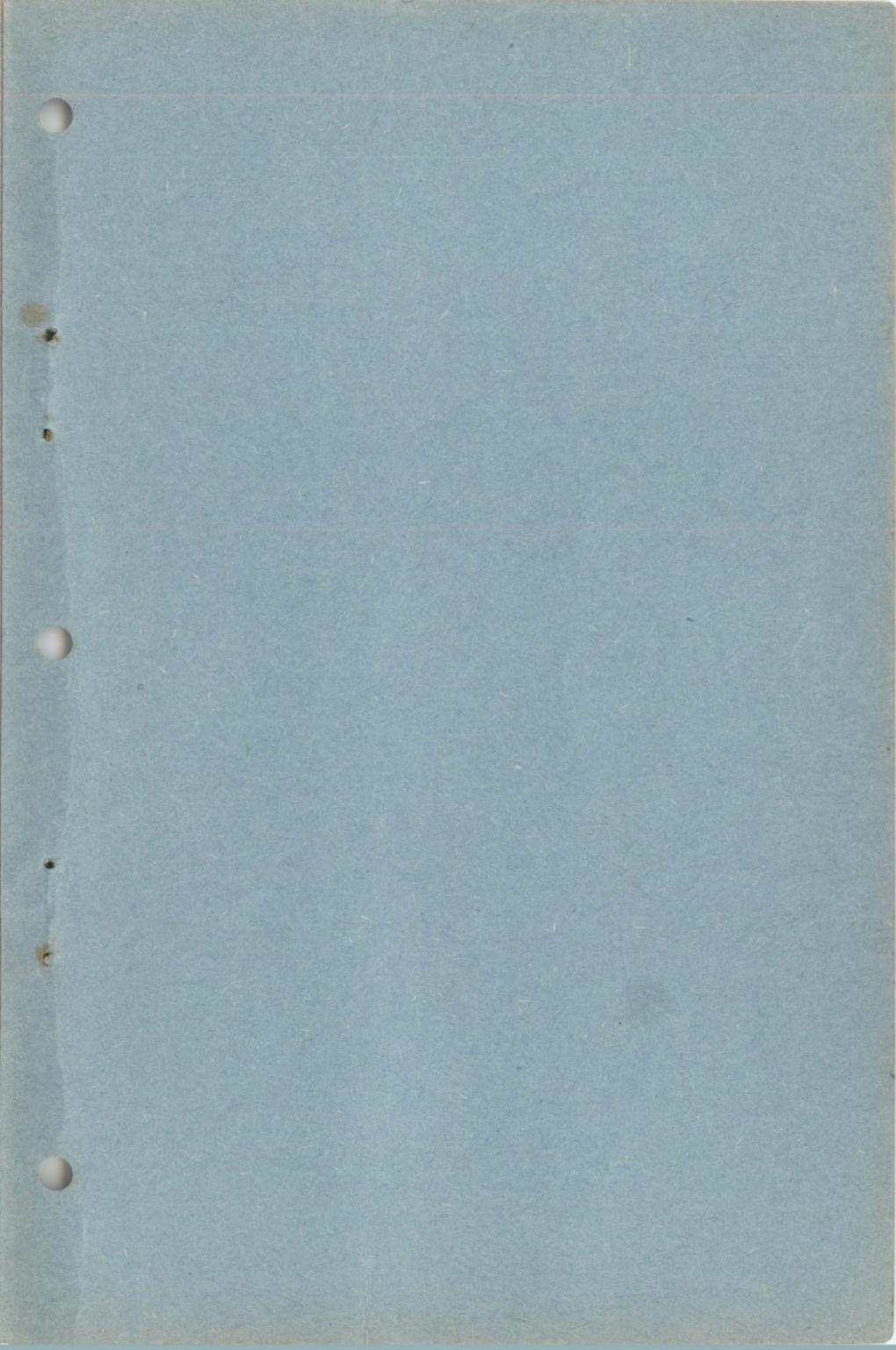
## SNIPER BADGE SHOOTING TEST

**The shooting may be preceded by a group, not to count, at 100 yards.**

Practice No.	Type	Range	No. of Rounds	Firing position	Type of target and size of inscribed circles, etc.	Scoring	Remarks
1	Snap	100	5	Lying in the open using sling.	Sniper head, 4-inch inscribed circle.	4-inch circle Remainder Possible 25	The target to be exposed for 3 seconds in a different place each time over a distance of 10 yards. Firer may be in aim throughout.
2	Application	200	5	Lying in the open using sling.	4-foot 5-inch (inscribed circle) Bull 12 " Inner 24 " Magpie 36 " Outer	5-inch Bull 12 " Inner 4 24 " Magpie 3 36 " Outer 2 Possible 25	No points are scored for shots in the normal 48; outer circle.
3	Moving	200	5	Cover or sling or both	Figure 12	Hits Possible 25	The target to move over a frontage in each direction of 12 yards; it must appear for not less than 7 and not more than 10 seconds. A firer firing when target not moving laterally will be disqualified.
4	Snap	200	5	Lying in the open using sling.	Figure 12 with 6-inch inscribed circle.	6-inch circle Remainder Possible 25	As for Practice 1.

## SNIPER BADGE SHOOTING TEST—continued

Practice No.	Type	Range	No. of Rounds	Firing position	Type of target and size of inscribed circles, etc.	Scoring	Remarks
5	Application	300	5	Hawkins	4-foot 7½-inch (inscribed circle) Bull 12 " " Inner 24 " " Magpie 36 " " Outer Possible 25	7½-inch Bull 12 " Inner 4 24 " Magpie 3 36 " Outer 2 Possible 25	The target should be either a 6-ft target with 4-ft target markings or normal 4-ft target with a 6-ft background. This will help the firer in the event of flank misses in a strong wind.
6	Application	500	2 sighters and 5	Hawkins or normal sling (no cover).	4-foot (see remarks) 12-inch (inscribed circle) Bull 24 " " Inner 36 " " Magpie 48 " " Outer Possible 25	12-inch Bull 24 " Inner 4 36 " Magpie 3 48 " Outer 2 Possible 25	HPS 150 Pass 120



**RESTRICTED**